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SWIMMING

BY

ARCHIBALD SINCLAIR AND WILLIAM HENRY

HON. SECS. OF THE LIFE-SAVING SOCIETY

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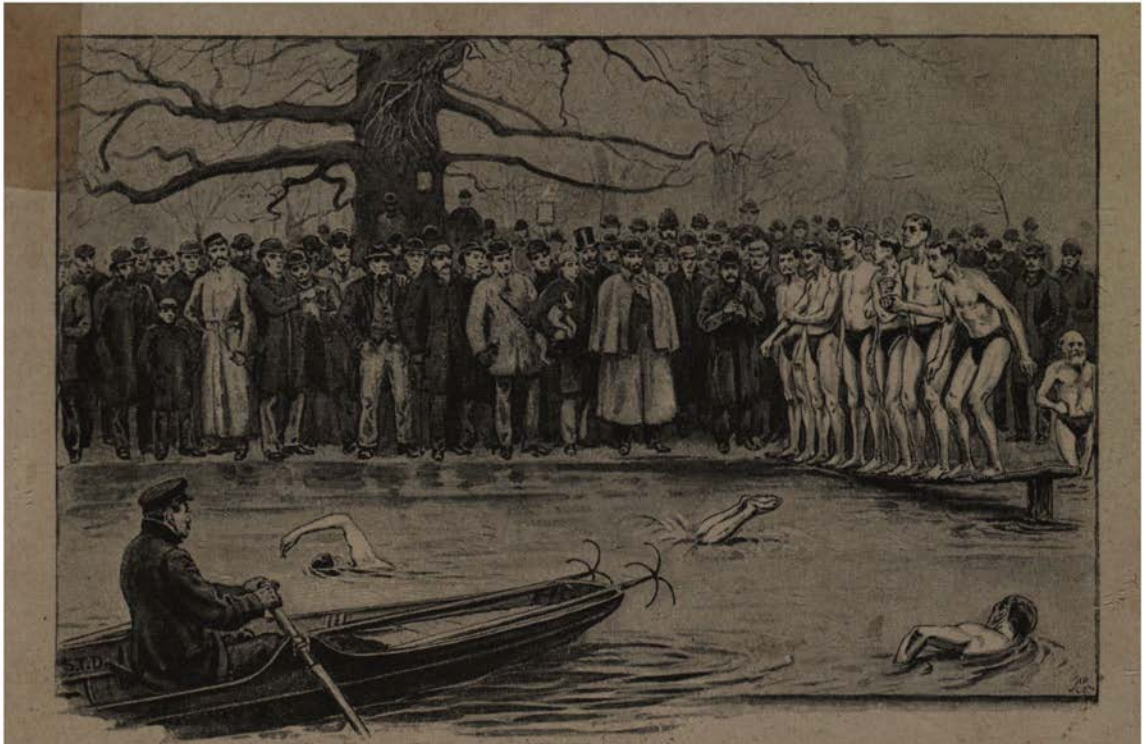

SERPENTINE CLUB.—CHRISTMAS MORNING.

DEDICATION

TO

H.R.H. THE PRINCE OF WALES

BADMINTON : *May* 1885.

HAVING received permission to dedicate these volumes, the BADMINTON LIBRARY of SPORTS and PASTIMES, to HIS ROYAL HIGHNESS THE PRINCE OF WALES, I do so feeling that I am dedicating them to one of the best and keenest sportsmen of our time. I can say, from personal observation, that there is no man who can extricate himself from a bustling and pushing crowd of horsemen, when a fox breaks covert, more dexterously and quickly than His Royal Highness; and that when hounds run hard over a big country, no man can take a line of his own and live with them better. Also, when the wind has been blowing hard, often have I seen His Royal Highness knocking over driven grouse and partridges and high-rocketing pheasants in first-rate

workmanlike style. He is held to be a good yachtsman, and as Commodore of the Royal Yacht Squadron is looked up to by those who love that pleasant and exhilarating pastime. His encouragement of racing is well known, and his attendance at the University, Public School, and other important Matches testifies to his being, like most English gentlemen, fond of all manly sports. I consider it a great privilege to be allowed to dedicate these volumes to so eminent a sportsman as His Royal Highness the Prince of Wales, and I do so with sincere feelings of respect and esteem and loyal devotion.

BEAUFORT.

BADMINTON

PREFACE

A FEW LINES only are necessary to explain the object with which these volumes are put forth. There is no modern encyclopædia to which the inexperienced man, who seeks guidance in the practice of the various British Sports and Pastimes, can turn for information. Some books there are on Hunting, some on Racing, some on Lawn Tennis, some on Fishing, and so on ; but one Library, or succession of volumes, which treats of the Sports and Pastimes indulged in by Englishmen—and women—is wanting. The Badminton Library is offered to supply the want. Of the imperfections which must be found in the execution of such a design we are

conscious. Experts often differ. But this we may say, that those who are seeking for knowledge on any of the subjects dealt with will find the results of many years' experience written by men who are in every case adepts at the Sport or Pastime of which they write. It is to point the way to success to those who are ignorant of the sciences they aspire to master, and who have no friend to help or coach them, that these volumes are written.

To those who have worked hard to place simply and clearly before the reader that which he will find within, the best thanks of the Editor are due. That it has been no slight labour to supervise all that has been written, he must acknowledge; but it has been a labour of love, and very much lightened by the courtesy of the Publisher, by the unflinching, indefatigable assistance of the Sub-Editor, and by the intelligent and able arrangement of each subject by the various writers, who are so thoroughly masters of the subjects of which they treat. The reward we all hope to reap is that our work may prove useful to this and future generations.

THE EDITOR.

AUTHORS' PREFACE

THE authors desire to acknowledge the valuable help accorded to them by many friends in the swimming world, without whose assistance they would have been unable to complete this work. Mr. E. HARDING PAYNE has supplied them with the information necessary to complete the chapter on Baths, and to him their gratitude is especially due.

They have also cordially to thank the officers of the Royal Humane Society, and the English and New Zealand Amateur Swimming Associations, for supplying details of the working of their respective organisations, and for their courteous assistance.

To the Editor of the 'Field,' the Controller of H.M. Stationery Office, the Principal Librarian British Museum, and the Thornton-Pickard Manufacturing Co., they are indebted for permission to reproduce certain maps, drawings, and photographs.

LONDON: *May* 1893

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OF

SPORTS AND PASTIMES

EDITED BY

HIS GRACE THE DUKE OF BEAUFORT, K.G.

ASSISTED BY ALFRED E. T. WATSON

SWIMMING

BOMBAY BRANCH

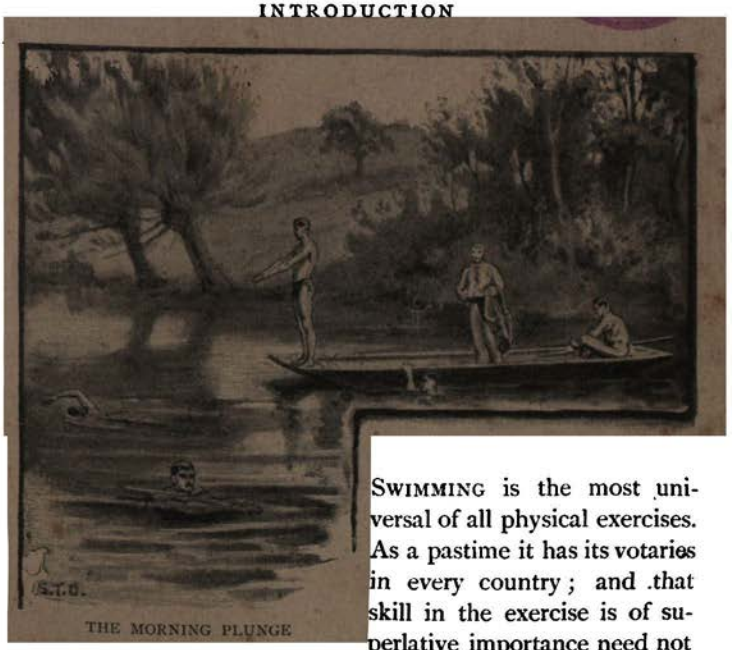
OF THE

Royal Asiatic Society.

SWIMMING

CHAPTER I

INTRODUCTION



THE MORNING PLUNGE

SWIMMING is the most universal of all physical exercises. As a pastime it has its votaries in every country; and that skill in the exercise is of superlative importance need not be dwelt upon, seeing that ability to swim may enable a man to save his life or the lives of others. The praises of swimmers were sounded by the great poets in the early days of

the world's history, and in many places scattered through the pages left us by antique sages are to be found references to the art. The Brahmins have always held bathing in high esteem. Sonnerat, in the narrative of his voyages between the years 1774 and 1781, describes the great religious bathing festivals common in India, especially mentioning the Sandivane, which the Brahmin priests make alone to the gods in general; and as the ancient priests of Egypt in like manner purified themselves by bathing in the morning and plunging into the sacred waters of the Nile, he remarks that the ceremony was probably derived by them from the early followers of Brahma.

The Egyptians, as recorded in the Book of Exodus, were in the habit of bathing in the Nile; and that it was common amongst even the women of the period is evidenced by the fact that the daughter of Pharaoh habitually indulged in the invigorating exercise.

It is more than probable that the discovery of the art was the result of accident and not intention; but, be that as it may, it can be conclusively proved that its practice, not only as a pastime but as an effective means of escape from threatened dangers, and also as a method of transport in crossing streams, dates back to the remotest era. The monuments of the ancients are the best possible proofs of their prowess. In the Nimroud gallery at the British Museum there are some interesting bas-reliefs depicting fugitives swimming for refuge to a fortress, and also the crossing of a river by Assur Nasir Pal, King of Assyria, and his army. The probable date of these monuments, which were discovered by Mr. Layard in the palace of Nimroud, is about 880 B.C. The first slab represents a castle, apparently built on an island in the river. One tower is defended by an armed man; two others are occupied by females. Three warriors, probably escaping from the enemy, are depicted as swimming across the stream, two of them on inflated skins in the mode practised to this day by the Arabs inhabiting the banks of the rivers of Assyria and Mesopotamia, except that in the bas-relief the swimmers are shown as re-

FUGITIVES SWIMMING TO A FORTRESS

taining the aperture, through which the air is forced, in their mouths. The third swimmer, pierced by an arrow discharged from the bow of a warrior kneeling on the shore, is represented as struggling without the support of a skin against the current. A study of these bas-reliefs has led us to infer that the older swimmers were not altogether deficient in the knowledge of the side-stroke, which swimmers seem to imagine is quite a modern development. The Assyrian bas-reliefs picture men

ASSYRIANS CROSSING A RIVER

swimming in the side-stroke position as well as with the breast-stroke on an inflated skin. A drawing made at Pompeii of one of the later mosaics still remaining there gives almost the exact position of the stroke popularised in England by Trudgeon, a stroke which was known and practised long before by the Indians and other uncivilised nations. There is an interesting vase painting to be seen in the British Museum on a vessel of the shape known as an oinochoë, or wine jug, of the

Archaic period (about 520–500 B.C.), with black figures on a red ground, the subject representing a ship on the prow of which (in the form of a boar's head) a nude male figure stands in an attitude as if about to dive into the sea. He is apparently being pushed off with a stick by a man behind him. The subject has not been definitely explained, but may refer to the landing of Protesilaos at Troy. He was the first of the Greeks to land on the shore of Troy, and—that he might be first—is recorded to have leapt out of the ship and swum to land. Another explanation is that the painting illustrates some religious ceremony, such as is described in Frazer's 'Golden Book,' vol. ii. p. 213, throwing human victims into the sea to appease marine or other deities.

PAINTING ON GREEK VASE (520–500 B.C.)

By the Greeks and Romans no branch of education was considered more important than swimming, and it was usual to stigmatise the uneducated by saying *neque literas neque natare didicit.* At first they bathed in the rivers and streams, but gradually the luxury of the warm bath crept in, and the health-producing open-air bathing gave way to the more enervating systems now adopted in eastern countries. Homer, in the Tenth Book of the Iliad, says of Diomed and Ulysses:

> from nocturnal sweat and sanguine stain
> They cleanse their bodies in the neighbouring main.
> Then in the polished bath, refreshed from toil,
> Their joints they supple with dissolving oil.[1]

[1] Pope.

References to the bathing of Nausicaa, daughter of Alcinous, king of Phæacia, and her attendants, in the rivers, are to be found in the Sixth Book of the Odyssey. Herodotus also tells us of the daring which the inhabitants of the Greek islands exhibited in swimming and diving. The laws of Lycurgus, the Spartan lawgiver, included swimming, and many of the kindred nations attached an equal value to the practice of it. In time of war a knowledge of it was often of extreme value, as frequently no other means offered of crossing rivers when pursuing or retreating from an enemy. It was made a part of military training, and highly esteemed as an accomplishment. The Lacedæmonians seem to have been utterly opposed to anything effeminate. They bathed daily in the Eurotas, and Alcibiades, when exiled among them, rendered himself popular by adopting this, among many other of their customs.

That bathing in open water was considered beneficial by the ancients is unquestionable. In the Ninth Book of the Æneid, Numanus, when taunting the Trojans, says :

> Strong from the cradle, of a sturdy brood,
> We bear our new-born infants to the flood ;
> There bathed amid the stream our boys we hold,
> With winter hardened and inured to cold.[1]

The Romans are supposed to have derived their ideas as to indoor bathing from the Greeks, but before covered baths became so common in Rome the more exhilarating exercise of swimming was popular. The Tiber flowed by the Campus Martius, where the Roman youth were trained to bear arms, and their exercises included bathing and swimming in the waters of the famous river. It is also said that swimming races were among their competitions, and this is not at all improbable, as the primary thought of the ancients was the cultivation of the body in order to endure the hardships of frequent wars.

The conqueror of Britain, Julius Cæsar, was renowned as

[1] Dryden.

a swimmer, and used at the head of his legions to cross the rivers encountered during the long marches incidental to his great campaigns. It is owing to his knowledge of the art that the world is enriched by his Commentaries. Singularly enough Camoens, the Virgil of Portugal, was, like Cæsar, once compelled to swim with his works in his mouth.

Cæsar, when attacked by Ptolemy in Alexandria, swam to his fleet, and returning with his forces defeated Ptolemy and proclaimed Cleopatra queen. Shakespeare describes a race between Cæsar and Cassius :

> I was born free as Cæsar ; so were you :
> We both have fed as well ; and we can both
> Endure the winter's cold as well as he :
> For once, upon a raw and gusty day,
> The troubled Tiber chafing with her shores,
> Cæsar said to me, 'Dar'st thou, Cassius, now,
> Leap in with me into this angry flood,
> And swim to yonder point?' Upon the word,
> Accoutred as I was, I plunged in,
> And bad him follow ; so, indeed, he did.
> The torrent roar'd ; and we did buffet it
> With lusty sinews ; throwing it aside
> And stemming it with hearts of controversy.
> But ere we could arrive the point propos'd,
> Cæsar cried, 'Help me, Cassius, or I sink.'
> I, as Æneas, our great ancestor,
> Did from the flames of Troy upon his shoulder
> The old Anchises bear, so, from the waves of Tiber
> Did I the tired Cæsar : And this man
> Is now become a god.

Seneca is said to have been so fond of a cold bath that he often used to plunge into the Euripus in mid-winter. In his writings he inveighs strongly against the luxury of the tepid baths. Plutarch, in his life of Cato, mentions that the philosopher taught his son to traverse rapid rivers and dangerous gulfs, and Suetonius incidentally remarks that the Emperor Augustus taught his nephew to swim.

It is stated that the Romans even incorporated a society of divers known as the Urinatores. Gruterus gives the following inscription :

Patrono Corporis Piscatorum et Urinatorum,

and says that there then remained on one of the gates of Rome the old characters :

Fl. Annæo lemoni fortunato Piscat urinatori. 2 2 iii.

In the reign of the Emperor Severus, the Byzantines were besieged for three years by the Greeks, and were in such dire straits that they at length resolved to attack their adversaries' fleet with their divers. These cut the cables under water, and having fastened them to some cables of their own ships carried off those of the enemy without their men, which obliged the Grecians to raise the siege.

The story told in one of the poems attributed to Musæus, of Leander, a young man of Abydos, who swam nightly across the Hellespont to visit his love, Hero, a priestess of Venus, and who was one night drowned in the attempt to reach the opposite shore, illustrates the fact that swimming was largely cultivated at this remote age ; as, even if the story be a myth, it is doubtless founded on some daring feat well known to the poet. Lord Byron in 1810 proved beyond question that the swim was easy of accomplishment to an expert. The actual breadth of the course is barely an English mile, but the distance covered by Lord Byron and Lieutenant Ekenhead, of the 'Salsette,' was computed by those on board the frigate as upwards of four English miles, as the currents are so strong that it is impossible for even a boat to go directly across. Byron's description of his swim is well known :

If, in the month of dark December,
Leander, who was nightly wont
(What maid will not the tale remember ?)
To cross thy stream, broad Hellespont !

If, when the wintry tempest roar'd,
He sped to Hero, nothing loth,
And thus of old thy current pour'd,
Fair Venus ! how I pity both.

For *me*, degenerate modern wretch,
Though in the genial month of May,
My dripping limbs I faintly stretch
And think I've done a feat to-day.

But, since he cross'd the rapid tide,
According to the doubtful story,
To woo—and—Lord knows what beside,
And swam for love, as I for glory.

'Twere hard to say who fared the best ;
Sad mortals ! thus the gods still plague you !
He lost his labour, I my jest ;
For he was drown'd and I've the ague.

All students of history are well acquainted with the noble deed of the brave Roman soldier Horatius Cocles, who with his two comrades, Spurius Lartius and Herminius, defended the passage against the Tuscan host while their countrymen were hewing away the bridge that connected the river's banks. His co-defenders escaped across the bridge when it was falling, and Horatius was left alone facing the troops of Lars Porsena. The scene which followed has been vividly related by Macaulay, in his 'Lays of Ancient Rome' :

Never, I ween, did swimmer,
In such an evil case,
Struggle through such a raging flood,
Safe to the landing place.
But his limbs were borne up bravely,
By the brave heart within,
And our good father Tiber
Bore bravely up his chin.

In commemoration of the services of Horatius Cocles a statue was raised in his honour by the Consul Publicola. The Roman

ladies not only enjoyed their daily bath, but evidently made swimming a study, as is evidenced by the fact that Clælia, a Roman virgin, who was given with other maidens as hostages to Porsena, escaped from the kingdom of Etruria and swam across the Tiber to Rome, where a statue was afterwards erected in her honour.

> The captive maids there tempt the raging tide,
> 'Scaped from their chains, with Clælia for their guide.

Bathing was regarded as a daily duty by the Romans. According to Fabricius, there were no fewer than eight hundred and fifty public baths in Rome and its environs. Some of these baths were of the most luxurious description, and were of such immense proportions that over a thousand persons could be accommodated in them. They were used by the highest personages in the empire, and the emperors themselves were not above mixing with their subjects. According to Pliny, the baths were open at 8 in the winter and 9 in the summer, but Vitruvius says the principal time of bathing was from noon until the evening. The bathers were anointed with oil scented by herbs, and when Julius Cæsar died he left a large quantity of oil annually to the bathers of Rome. The price of admission was small. In the time of Horace it was only the fourth of an as (*quadrans*), half a farthing, and Gibbon tells us that the meanest Roman could purchase with a small copper coin the daily enjoyment of a scene of pomp and luxury which excited the envy of the kings of Asia.

The famous Roman baths were those of Caracalla, Diocletian, Agrippa, Trajan, Titus, &c. The excavations made at Pompeii have also revealed the fact that bathing was almost a passion with the Romans, and that towards the decline of the empire the baths became more luxurious than ever. The baths erected by Aurelius Antoninus Bassianus, nicknamed Caracalla, may be taken as a typical example. Professor Aitchison, R.A., in his Royal Academy lectures on architecture in 1889, gave some very interesting particulars relating

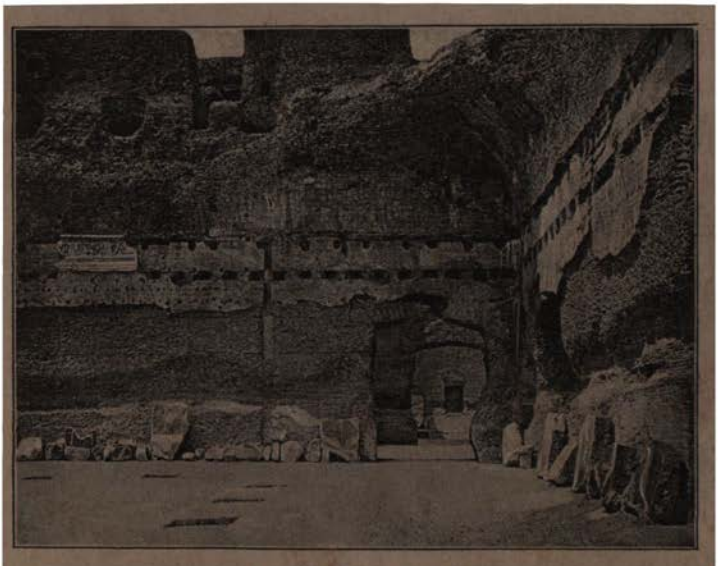
to this and the other large baths in Rome. Caracalla's bath was completed by him in 217 A.D., and the building was restored about 500 A.D. by Theodoric. The whole enclosure consisted of an oblong square, with large flat apses on each flank, and was about 1,108 ft. long, exclusive of the apses, by 1,060 ft. deep, exclusive of the reservoirs. It was about a mile round, and contained nearly 1,293,192 ft., or about 29¾ acres, with an additional space of one and a half acre for reservoirs. The tanks were capable of containing about 15,000,000 gallons of water. The main building was about 716 ft. long by 367 ft. deep, with a semicircular projection at the back, 164 ft. in diameter. There was a gymnasium on either side, with front and two side entrances to each. The centre, or bath portion, had two large entrances, with a large swimming bath between them. Professor Aitchison inclines to the belief that this swimming bath was covered over and glazed. Some idea of the magnitude of the building is given by the same authority. He says that it was about 150 ft. shorter than the river front of the English Houses of Parliament, and about 92 ft. deeper, exclusive of the apse. It had 1,600 polished seats for bathers, and was fitted in such a style of magnificence that an almost incredible sum must have been spent on its erection. The grounds at the rear of the main building were laid out with trees and walks, with open spaces and seats.

These Roman baths were termed *thermæ*, and were used for various purposes. There were cold, tepid, warm, hot, vapour, and swimming baths, gymnasia, open spaces for ball games and exercises, lecture-rooms, halls for discussions, schools for professional athletes, &c. Vast stores of oil, perfumes, dust for athletes, wood and pitch for the fires, and towels, had to be maintained, and an army of slaves to attend to the requirements of bathers, and assist in the management of these stupendous undertakings.

In comparison with the size of the buildings, the swimming tanks, in the majority of cases, seem to have been very small.

Those at Pompeii are but 13 ft. in diameter. Cicero evidently did not appreciate this limited accommodation for swimmers, for he complained to his brother Quintus that he needed a wider piscina, so that he might not hurt his hands when he flung them out.

Lucian, in a paper on 'Hippias, or the Bath,' describes three handsome cold-water swimming baths designed by him,



BATHS OF CARACALLA

which were made of green marble, and ornamented with statues.

The literature of swimming is but meagre, and the records of its growth in popular favour are therefore difficult to obtain. It seems to have declined in public estimation after the fall of Rome, and to have been neglected by the great warlike nations, who until that period had encouraged it as a means of health and physical training. The Roman patrician, bishop, and poet, Sidonius Apollinaris, distinguishes the Franks from

barbarians as 'the swimmers'; and Charlemagne, their great king in later years, was known as an accomplished swimmer. The tribes of Northern Europe indulged in the art to some extent, and it is recorded in Pontoppidan's 'History of Norway' that the swimming powers of Olaf Tryggeson, a king of Norway, could not be equalled. In the MS. Cott. Titus, A. xxiii., the following recommendation to those who follow a military profession appears :

> To swymme is eke to lerne in sommer seson.
> Men fynde not a bridge so often as a flood,
> Swymmyng to voyde ; and chase hoste wil eson
> Eke after rayne the rivers goeth wood
> That every man in t' host can swymme, is good :
> Knyght, squyer, footman, cook and cosynere,
> And grome, and page, in swymmyng is to lere.

Peacham, in describing the requisites for a complete gentleman, mentions swimming as one, and particularly recommends it to such as are inclined to follow a military profession. It has often proved of service to military and naval officers at critical periods. In the famous defence of Genoa an officer swam with despatches from General Massena through the English fleet, and after delivering them to the First Consul returned with the replies. Sir Cloudesley Shovel, when a cabin boy, also conveyed a despatch by swimming under a heavy fire, and there are many other instances of equally gallant feats on record.

The inhabitants of the lake dwellings, or crannogs, who flourished during the Stone and Bronze Ages, were no doubt proficient in the art of natation. The remains of many of the lake dwellings have been found in Scotland and Ireland. As late as 1567 there is an instance recorded of an attack being made upon one of these, situated in a lough near Omagh, by Sir Henry Sydney, at which Edward Vaughan, although well able to swim, was drowned through being heavily armed. In the attack on another of these dwellings, mentioned in the 'Calendar of State Papers of Ireland,' vol. 156, page 374,

some of the inhabitants saved themselves by swimming to shore.

In the poem 'Beowulf,' one of the oldest written in the English language, there is a long account of a swimming-match between Beowulf and Breca. These two athletes, we are told, swam side by side for five days in a raging sea, intensely cold. 'Geofon ythum weol wintres wylme.' At the end of five days they were forced to part company 'une flod todraf,' and then Beowulf went off on an expedition of his own, killing several sea monsters and water demons, and finally landed on the shores of Finland.

The edition of the 'Vision of Piers Plowman' published in 1550 contains the following reference to swimming and diving :

> Take two strong men and in Temese cast them,
> And both naked as a needle, ther non sikerer than other ;
> The one hath cunnynge and can swymme and *dyve*,
> The other is lewd of that laboure, lerned never to swym.
> Which trowest of these two in Temese is most in dred,
> He that never dived ne nought can of swymmyng,
> Or the swymmer that is safe if he himself lyke?

Sir Thomas Elyot, in 'The Boke named the Governour,' published in London in 1531, and again in 1537, says :

> There is an exercise which is right profitable in extreme danger of wars, but because there seemeth to be some peril in the learning thereof, and also it hath not been of long time much used, especially among noblemen, perchance some readers will very little esteem it, I mean swimming. But notwithstanding, if they revolve the imbecility of our nature, the hazards and danger of battle, with the examples which shall hereafter be showed, they will, I doubt not, think it extremely necessary to a captain or man of arms.

Shakespeare seems either to have been a capable swimmer or else well versed in the principles of the art. His description of the trial of strength between Cæsar and Cassius has already

been quoted. In the play of 'Henry the Eighth' Cardinal Wolsey, in his speech to Cromwell, remarks :

> I have ventur'd,
> Like little wanton boys that swim on bladders,
> This many summers in a sea of glory,
> But far beyond my depth.

Again, in the play of 'The Tempest' there is the following description of an escape from a wreck :

> Sir, he may live !
> I saw him beat the billows under him,
> And ride upon their back. He trod the water,
> Whose enmity he flung aside, and breasted
> The most swollen surge that met him.
> His bold head
> High 'bove the most contentious waves he kept,
> And oared himself with his strong arms to shore.

Burton, in his 'Anatomy of Melancholy,' mentions swimming as one of the pastimes both of the gentry and common people. It was, we know, part of the pleasures of the French nobles, for Louis XI. and his courtiers used frequently to bathe together in the Seine, and our English kings gradually adopted the practice. In the reign of Charles II. swimming and foot races became fashionable in England. Colonel Blood, when arrested in 1672 for stealing the Crown jewels at the Tower, confessed to King Charles II. that on one occasion he had engaged to shoot his Majesty as he went to swim in the Thames above Battersea, but that when he was about to take aim, the awe of majesty paralysed his hand, and that he not only gave up his design but bound his confederates to do the same.

The first actual work on swimming that we can trace is one published in the year 1538, termed 'Colymbetes, sive de arte natandi,' by Nicolas Wynman, a Dutchman. It is written in dialogue form, the interlocutors being Pampirus and Erotes. In 1587 a work from the pen of Sir Everard Digby was published in England. It is written in Latin, and includes

some very curious full-page woodcuts. This work was very largely plagiarised by later writers, as were also those of Wynman

RUNNING HEADER AND FLOATING
(*After Sir E. Digby*)

and Thevenot, a French writer, whose first book appeared about 1697. Digby's book was translated into English by Christopher Middleton in 1595, and practically copied by

William Percy in 1658. Percy's book purports to demonstrate 'the rules and practice of swimming in an exact, plain and easie method, necessary to be known and practised by all who studie or desire their own preservation.' It is addressed 'to the ingenious, prudent and self-preserving reader and vigilant practiser of the thrice noble exercise and art of swimming.' The following arguments, used by one of the earlier writers on swimming, are both interesting and amusing:

It is healthful for our bodies, clearing them from sweat and outward filth, and the greatest profit of all is the preservation of our own lives; what more dear? what more precious? Skin for skin and all that a man hath will he give for his life. As King Richard the Third, when his horse was killed under him at Bosworth Field, would have given a kingdom for another horse, that thereby he might have saved himself, and the other kingdom; crying out, 'A kingdom for a horse!' Were the greatest potentate in the world in danger of drowning, would he not give half his dominions to anyone that could save his life? Yea, all, rather than dye.

To excite you to this noble and self-saving exercise, modern examples I could give you many, as not long since a gentleman in danger of drowning in the Thames cried out, 'A thousand pounds for him that could help him!' Had he spent but the tythe of that time he had employed in more vain recreations in learning this art, he might have saved himself and his money too.

I could very well wish every man and woman were perfect in swimming likewise; which with a little practice they easily may attain unto; and that they may do it, this ensuing treatise is on purpose composed, to direct them, as I am assured it perfectly will, and that not only in one only usual posture of swimming, that is on the belly, but in very many various postures; some far more easie than that common way of swimming on the belly, and not so toilsome nor wearysome, for a man may swim on his back without any motion of his arms, less with his body, then he must use when he swims upon his belly, and more free from gusts of waves which sometimes, otherwise, he must be forced to receive against his face, and so consequently into his mouth.

This ensuing treatise will clearly demonstrate unto you, that man doth, or at least may, naturally swim, better than any creature; nay, as he is the more noble, and above all other creatures, so, indeed, he excels them all in swimming, nay, fishes themselves.

The first degree of swimming is to bear ourselves up upon the water. And this may be said to be done in two wayes; either by holding up the head onely above the water, or by lying more flat upon the water, and bearing up the middle of the body.

As all other creatures have the gift of Nature in greater or lesser

CIRCUMVOLUTION (*After Sir E. Digby*)

measure to swim without the help of art which they are incapable of, so man by art, together with the help of Nature, excels all other creatures in swimming.

But here it may be objected, that fishes, whose perpetual motion is swimming, and that in a wonderful manner, are to be excepted.

To this we answer, that fishes are by Nature assigned to this element; and this is their natural place, wherein they live without any respiration; but to a man, who gives out and draws in breath, the water is violent and deadly; wherefore, fishes being long detained in the air, or men in the water, die and perish, so that, although fishes may challenge to themselves a precellency in swimming, yet, if we consider this very reason of their habitation and nature, fishes are very far inferiour to a man who is skilful in the art of swimming.

For a man may swim with his face upwards, downwards; on his right side, on his left side; stand, sit, lie, carry his clothes and other things safely, walk in the bottom of the waters; which no fishes nor other creature can do.

The same author recommends persons not to bathe at night when 'toades, snakes, and other hurtful poisonous things' are abroad, and also to abstain from going into the water at the changes of the moon. Some of the 'maximes in swimming' are also very quaint. To turn with 'both legs and arms upwards' is stated to be the best method for a swimmer desirous of 'avoiding ships flying under sail, in danger to run over him, of boats unadvisedly coming too near him, and likewise if there should be any lions, bears, or fierce dogs lurking in the river.' A conversion, or turning like a bell; circumvolution, or turning about in the water; a quadrupatite, or four-fold percussion or striking of the water; retrogradation, or swimming backward; the side-turn, circulation or turning round; the perpendicular conversion, or turning being upright in the water, and the nimbleness of a dolphin, are some of the feats named.

Dr. E. Baynard refers to the value of swimming in a poem entitled 'Health,' which was issued in 1764:

> Of exercises, swimming's best,
> Strengthens the muscles and the chest,
> And all their fleshy parts confirms.
> Extends, and stretches legs and arms,
> And, with a nimble retro-spring,
> Contracts, and brings them back again.

As 'tis the best, so 'tis the sum
Of exercises all in one,
And of all motions most compleat,
Because 'tis vi'lent without heat.

There were several editions of 'L'Art de Nager,' by M. Thevenot. Those translated into English apparently became the standard works, and were plagiarised wholesale by later writers. The oft-quoted advice of Dr. Benjamin Franklin to swimmers is nearly all from Thevenot, who himself drew largely from Wynman and Digby. In the edition of 1782 appear some very excellent plates, although the positions and styles do not correspond with modern ideas. Oronzio de Bernardi's system of teaching swimming was described in a work published in 1797, and again in 1807. Bernardi claimed that, after a few days' instruction, his pupils could travel incredible distances. He actually had the impudence to say that, after eleven days' teaching, a young man who had previously been quite unable to swim traversed six miles. An able criticism of his system, which was that of upright swimming, appeared in Vol. xxxiv. of the 'Quarterly Review,' 1826.

The famous work by Joseph Strutt, on 'The Sports and Pastimes of England,' only includes a page of swimming, of which the author evidently knew very little. He says that 'Boys in the country usually learn to swim with bundles of bullrushes, and with corks where the rushes cannot readily be procured, particularly in the neighbourhood of London, where we are told two centuries back there were men who could teach the art of swimming well.'

In the year 1816 a book on scientific swimming was written by J. Frost, for many years teacher of the art at Nottingham. It is embellished with twelve copper-plate engravings, and is really a very capable treatise on the subject. Pfuel's system of teaching by means of a drill was published in Berlin about this time. It was followed by that of Peter Heinrich Clias, in which is detailed the German system of drill, and also the methods of bringing drowning persons to land. Apart from some good

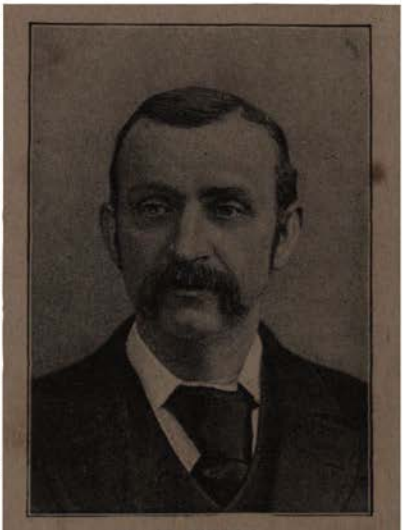
magazine articles, nothing of a special nature was published until 1841, when two excellent prize essays of the National Swimming Society, by Messrs. Mason and Payne, were issued in book form. That by Mr. Mason, 1839, is an exceptionally well-written work. Mr. Payne, who gained the prize in 1840, covered almost the same ground, but concludes with a descriptive poem on the incidents connected with the sport, which is however too long to quote. In the 'Instructions in the Art of Swimming,' by C. Richardson, 1857, the astonishing statement is made that the writer does not think that a quarter of a mile has ever been swum in a quarter of an hour, but that a man may get over a short distance, such as a hundred yards, at the rate of a mile an hour.

The swimming master of Victoria Park, by name William Woodbridge, compiled a work in 1864, entitled 'The Swimmer's Practical Manual of Plain Facts and Useful Hints.' In it he mentions that Dr. Bedale, of Manchester, once swam from Liverpool to Runcorn, and on another occasion from Bangor to Beaumaris and up the Menai Straits. This expert was also frequently to be seen floating in the River Mersey, having attached to his body a light mast and sail secured in a belt, by means of which he would for hours enjoy himself. The Liverpool to Runcorn swim took place in 1837, and was, we believe, a race for a wager against a Mr. M. Vipond. The Doctor is stated to have won by half a mile, in three hours and thirty-five minutes.

A really valuable work, entitled a 'Manual of Swimming,' written by Charles Steedman, was published in Melbourne in 1867, and afterwards in London. It deals very fully with the art, and the illustrations mark a distinct advance in the method of delineating the correct movements. Steedman was for many years the Champion of England, and also distinguished himself in Victoria. He brushed away many of the old fallacies, and as a writer on the sport he stands in the front rank with Wynman, Digby, Thevenot, and Wilson, whose works in their respective day were recognised as autho-

rities. So little interest was taken in swimming at this period that a 'Bibliographical List of Works on Swimming,' by Mr. Ralph Thomas, which must have been compiled at the expense of much time and labour, only gained a very limited circulation. It was issued in 1868, and gave very complete, albeit concise, information on the subject.

Of the later writers, Mr. William Wilson, of Glasgow, stands pre-eminent. He is perhaps the oldest living authority on the art, and has done more than any man in Scotland to raise the tone of the sport. For many years he has lectured on its principles, and has from time to time contributed valuable works to its literature, the best known being 'The Swimming Instructor,' a treatise on the arts of swimming and diving.



MR. W. WILSON

Captain Andrews, of Toronto, and Mr. Martin Cobbett have also written excellent treatises on the art.

During the last forty years swimming has been gradually regaining its lost ground in public favour, and within the short period of ten years has advanced by rapid strides. After the Swimming Association of Great Britain was formed its championship races soon brought forward many good men, whose names were added to a brief list of masters, amongst whom Beckwith, H. Gurr, and J. B. Johnson were most prominent. First came T. Morris and H. Parker, then D. Ainsworth of the Serpentine Club, and after them Horace Davenport, who holds an honoured record as an amateur.

Mr. Davenport not only gained considerable renown as a long-distance swimmer, but also aided the Association considerably in its work; and it is to his able representation of it as the amateur champion of England that much of its success is due. The championship records prove of what sterling ability as a swimmer he was possessed. In the race for the mile championship of 1877—the blue riband of the amateur swimming world—Mr. Davenport swam a mile in still water at the Welsh Harp in 29 mins. 25½ secs., and it was not until 1892 that this record was ever beaten by an amateur. Then Mr. S. W. Greaseley, who had in the previous year shown exceptionally fine form, beat Mr. Davenport's long-standing record by over a minute. Undoubtedly Mr. Davenport is the finest long-distance amateur swimmer that England has ever seen. One of his feats was that of swimming from Southsea to Ryde and back; this was accomplished in the year 1884. The time occupied was 5 hours 25 mins., the water being very choppy.

MR. HORACE DAVENPORT

The improvement in the times recorded for championship distances is very noticeable, but the varying conditions under which these races are swum prevent the drawing up of a reliable comparison of reputed records. Mr. J. Nuttall, when an amateur, swam 100 yards in 1 min. 6¼ secs. This was beaten in 1893 by Mr. J. H. Tyers, who covered the distance in 1 min. 4½ secs., but Mr. Nuttall swam in a long bath and Mr. Tyers in one comparatively short. As Mr. Tyers is still in his teens,

it is not at all improbable that a whole batch of swimming records will be credited to his name before his swimming career ceases.

Although the older swimmers are not credited with performances that approach those of their successors, it must not be forgotten that the conditions under which they raced, and the opportunities afforded to them for displaying their ability, have nothing in common with the great advantages possessed by the swimmers of to-day; and it is all the more creditable to men like Beckwith, Gurr, and Johnson that they should have risen above the common herd of bathers. It is not much more than a quarter of a century ago that the boys at a great London school like Christ's Hospital had to depend upon an open-air bath, termed the Peerless Pool, in the City Road, for their chance of practice, and the earlier swimmers were placed in similar predicaments. Even if they had baths in which to practise, they were more fit for ratting expeditions than for swimming, were ill-lighted, badly ventilated, and not often supplied with clean water. In comparison with the accommodation provided twenty years ago, the bathers of the present day have palaces erected for them, and their thanks are due to those public-spirited gentlemen who piloted such an important bill for the well-being and health of the nation as the Baths and Wash-houses Act through Parliament. In the future swimming seems destined to take a high place among the national exercises. Those who participate in the pastime are increasing in number every day, and it seems

MR. J. NUTTALL.

more than likely that the existing records will soon cease to be causes of surprise, or considered difficult to beat. Mr. Nuttall, who left the amateur ranks in 1888, has not since had many opportunities of demonstrating his skill, but we believe that, had he been competing in the amateur championships since that period, many new records would have been added to his name. As it is, the performances which he has undoubtedly accomplished are in themselves now considered little short of marvellous by older swimmers; but from Australia come reports of even still more rapid swims by Mr. W. J. Gormly of Sydney, New South Wales, Mr. Meadham, and others. They are reported to be capable of swimming 100 yards in a minute.

MR. W. J. GORMLY

It is not in Great Britain alone that this progress in swimming is noticeable, for in New Zealand, Canada, the United States, and Australia, every effort is being made by enthusiasts to push forward the art they love. We hope that this book will in some degree help to produce a real and active interest in the art of swimming among those who are yet ignorant of it, and will stimulate others who are followers of this fascinating and healthful sport to renewed efforts to promote its practice amongst every branch of the Anglo-Saxon race.

CHAPTER II

THE TEACHING OF SWIMMING

It is a lamentable fact that those possessing the necessary technical knowledge and practical proficiency have hitherto made so few attempts to place the teaching of swimming on a proper scientific basis. When everything is done by 'rule of thumb,' it is not surprising to find that paid instructors have their own notions or theories as to the best method of imparting a knowledge of the art of natation. From time to time various so-called systems of instruction have been formulated, but there is none that has obtained or deserved general acceptance, and it is difficult to find any two men who adopt similar means or teach the movements in precisely the same way. This want of uniformity is very largely due to the absurd notions which exist as to the qualifications which should be possessed by a swimming master. Very often his self-appointment as 'professor,' or his election by club committees and bath commissioners, is based upon the fact that he has been a successful competitor and is the possessor of a fine collection of trophies, or that he has been a soldier or sailor and has thereby learned habits of drill and discipline which may fit him to act as instructor. There is no need to demonstrate the erroneousness of these ideas, for it must be apparent to all that a champion swimmer or a smart drill sergeant is not necessarily a good teacher. Many of the best swimmers do not know why they swim so fast; with a good number of them their speed is more the result of accident than the following out of the art on

any sound scientific lines. They do not take the trouble to investigate and understand the mechanical laws which govern all propulsion through the water, and when they dub themselves 'Professors,' do so on the assumption that because they have been able to compete successfully in championship races they are born teachers.

In order that the teaching of swimming may be systematic and thorough in every detail, it is necessary that the title of 'Professor' or 'Instructor' should have attached to it a meaning very different from that which it has at present; but if this is to be effected, it is absolutely essential that a proper code of fixed principles should be laid down, so that the fabric of the profession may be established and built up on a sound foundation. The code must be complete in its details, so that nothing may be forgotten, nothing be unforeseen, nothing unprovided for. This is a labour which should be undertaken by those professors who are recognised by the public as capable men, whose object should be to raise their calling to the high position in which it deserves to be placed. It is, of course, easy to give advice of this nature, but it is quite a different matter to attempt to carry it to a practical issue. There are now many competent teachers of swimming, who, if they could be induced to work together, would doubtless arrive at and adopt a definite system of instruction on scientific principles; and even if the work were at first imperfectly accomplished, it would be the means of directing attention to the subject. But, unfortunately, personal considerations are at present very powerful obstacles to any measures of reform, and the attempts which have been made to institute some system of certificate examinations have been rendered futile by the very men who would chiefly benefit by them. Competition is the stumbling block over which the professional legislators came to grief. They were perfectly willing to institute proficiency certificates, but wanted them to be awarded without proper examination, possibly by reason of the fact that the ordeal would have been too much for some of their number. There is no properly

organised society entitled to speak or act for the main body of professional swimmers, and the matter should, therefore, be taken up by those who are not pecuniarily interested in the sport, so that they may not be bound to any course of action, or their opinions ignored, when any serious endeavour is made to make the calling of a 'swimming instructor' as honourable and attractive as, in virtue of its great importance, it ought to be. As a natural result of reform, the measures which are at first adopted will of necessity be trying, and to a certain degree appear harsh, but when once the work is accomplished and a proper system of examination established, the status of the art will be considerably raised from a professional point of view. Good men who now are deterred from adopting the teaching of swimming as a means of livelihood, by reason of the discredit into which professional swimming has fallen, will be enabled to take their proper place among the ranks of the workers in the cause of national education. It is by no means uncommon to hear the superficial instructor announce everything in detail beforehand with great volubility, and then to see him working in a false position, endeavouring to justify his previous statements. He simply labours under a form of ignorance which consists of practical knowledge alone, without the aid of theory. This kind of knowledge is to a great extent antagonistic to all useful development.

To those who have not studied the principles of true and useful progress, the preceding statement may appear contrary to received opinion, but it is not so. Theoretical knowledge is essentially progressive ; it suggests new modes of doing everything, modifications and alterations of existing tenets. Practical knowledge alone, unaided by theory, is obstructive to the last degree. It considers nothing possible that has not been actually demonstrated, and more often than not ignores all suggestions made for improvement. But theoretical knowledge, unaided by practice and experience, is equally as dangerous to all lasting work, for the theorists who lack the steadying power of experience are apt to fly too wildly. As a general rule, the

theorist looks upon the practical man as if he were a mere tool, whilst the latter bestows upon his critic a contempt similar to that with which 'practical' farmers of the old-fashioned sort regard professors of the science of Agricultural Chemistry. In both cases the attitude assumed is due to ignorance and prejudice.

At any rate, it will doubtless be admitted that swimmers who seek to be appointed as teachers should be thoroughly conversant with the details of the movements which are of use in the water, and of the natural laws which govern swimming. It should never be forgotten, when selecting instructors, that proficiency in the art of natation is not merely the ability to swim a certain distance in record time, but that it comprises a knowledge of diving, plunging, floating, and scientific swimming, which fast professional swimmers, with but a few notable exceptions, do not possess to any degree. Above all, they must have the ability to impart this knowledge to others in an easily intelligible and attractive manner. In a word, they must be able not merely to *do* but to *teach*. It has been largely recognised of late, in and around Lancashire, that these qualifications are necessary, and properly trained men have there been employed to watch the young swimmers. They have carried out the duties entrusted to them in an efficient manner, and as a result the county of Lancashire can now hold its own against all comers ; for its swimmers are, as a body, the speediest that can be found in the kingdom. Those to whom the work of selecting teachers is entrusted have, in this instance, grasped the fact that it is best to appoint men with proper credentials for such important posts. In other parts of the country matters unfortunately wear quite a different aspect. Many bath committees are composed principally of persons who are elected on account of their oratorical powers, but have little if any knowledge of the matters they have to decide upon, and who are wholly unacquainted with the principles and practice of the art of swimming, or even the technical expressions and terms in use among swimmers. Yet these men rule over the baths in

which the swimmers of England practise, and compel them to beg for the privilege of being allowed to promote the art with the view of making it popular. To remedy this evil very great care should be exercised in appointing responsible officers, men who will study all details appertaining to baths and bathing places, so that the arrangements at the baths under their control may be of the best possible character, and who will, when opportunity arises for the appointment of instructors, exercise great care in the selection, and require from all applicants convincing proof of their fitness to undertake so responsible a trust. It requires as much thought, study, and constant practice to become an efficient instructor of swimming, as it does to master any other branch of physical education. A high standard of excellence is not otherwise reached. Many absurd notions which at present exist as to the methods that should be employed in teaching the correct movements in swimming would soon be eradicated if the selection of swimming masters were based on the lines just indicated.

As a general rule, most teachers begin by instructing their pupils in the motion of the arms. This mistaken idea may perhaps be attributable to the fact that most of the books which have been published on swimming strongly advise this course, as if the arms and hands were of the highest importance in propelling the body through the water. It is, therefore, not surprising that most swimmers should have the inclination to use their arms with all the power at their disposal to pull the body along. That the movements of the arms are only of secondary consideration as a motive power will easily be learned by watching a number of swimmers. It will then be noticed that in almost every instance the movement of the arms is the same, but that yet, with all this apparent similarity, some of them are able to swim very fast without any visible exertion, while the progression of others is painfully slow and laborious.

By employing the arms with all the force at command much power is wasted, without any proportionate acceleration of

speed, and the vital force is naturally diminished. Exhaustion follows because, when much energy is centred in the arm movements quick breathing is caused, the heart is forced to act much faster, and the supply of pure air to enable respiration to be properly carried on is greatly lessened. It is, therefore, desirable that the learner should be strongly advised not to depend upon the arm movements ; and in order that the tuition may be effectual, it is absolutely essential that the leg movements should be taught first. That the movement of the lower limbs is the principal factor in obtaining greater propelling power can be easily demonstrated by the simple device of first swimming with the hands tied behind the back for twenty yards, and then returning with the hands free and the legs tied, taking care that no assistance be rendered with the legs. If the time of each trial be correctly taken by a competent person, it will be seen that one can swim much faster when using the legs only than when swimming with only the hands free. Greater importance has hitherto been attached to the teaching of the arm movements than is needful. They can be easily explained in a few words, out of the water, for it is quite natural for man to push his arms forward, as in that style of swimming known as the 'breast-stroke,' whereas with the legs the action is very different from man's natural method of progress in walking, and requires a considerable amount of practice and training. Unless the learner be correctly taught to accomplish the leg-stroke before an attempt is made to swim, he will never understand the cause and effect of the combined action of the legs and arms as a motive power. This knowledge should be possessed by every pupil, as it will be the means of imparting much interest to the subject, and give him food for thought which may eventually lead to the best results.

In our opinion swimming should be part of the national education. If boys and girls be taught swimming at school they will almost to a certainty practise it afterwards, but even if they do not, swimming has this advantage—it can never be forgotten. It is generally admitted that the pastime has great

advantages over all others, that it is a most pleasant and suitable form of bodily exercise– especially for the young, who are able to maintain their bodily heat—and most important for the preservation and promotion of health. It has a beneficial influence on the blood and its circulation. Bodily exercise, when taken judiciously, is indisputably good, and many of the disturbances in the digestive organs to which mankind is now so prone would be avoided if swimming and bathing were more generally practised.

Swimming also results in very marked effects on the respiratory organs, because the simple backward and forward movement of the arms opens up the cavity of the chest and promotes powerful respiration, by means of which plenty of oxygen is inhaled and much waste matter given off. Deep and calm breathing is promoted in place of short and superficial gasps. Good respiration also facilitates the circulation and purification of the blood, and accelerates the process of renewal and exchange of material in all parts of the body. The strengthening of the digestive organs tends to increase the muscular and mental capacities of men, thereby proving the truth of the old adage, '*Mens sana in corpore sano.*' But in spite of all this, swimming has not, up to the present, been systematically taught, and the legislature does not seem to have recognised that, apart from the consideration that a knowledge of it is invaluable to any man from a life-preserving and life-saving point of view, swimming, from a hygienic standpoint, is essentially the pastime which should be indulged in by the young.

Comments on the curious fact that so many English men and women are unable to swim are usually made in daily papers after some melancholy boating accident which, by nature of its magnitude, appeals to the people at large ; but as soon as the excitement for the time being is over, the subject is allowed to drop, and the chance of doing real good lost. Ordinary drowning accidents, with the subsequent verdicts of 'accidental death,' are continually reported, and cause little or no remark. Yet a vast number of these would be prevented if

swimming were generally taught. The time may come when the reproach that one can neither swim nor read will be considered as indicative of a notorious dunce, as it was in the days of Aristotle.

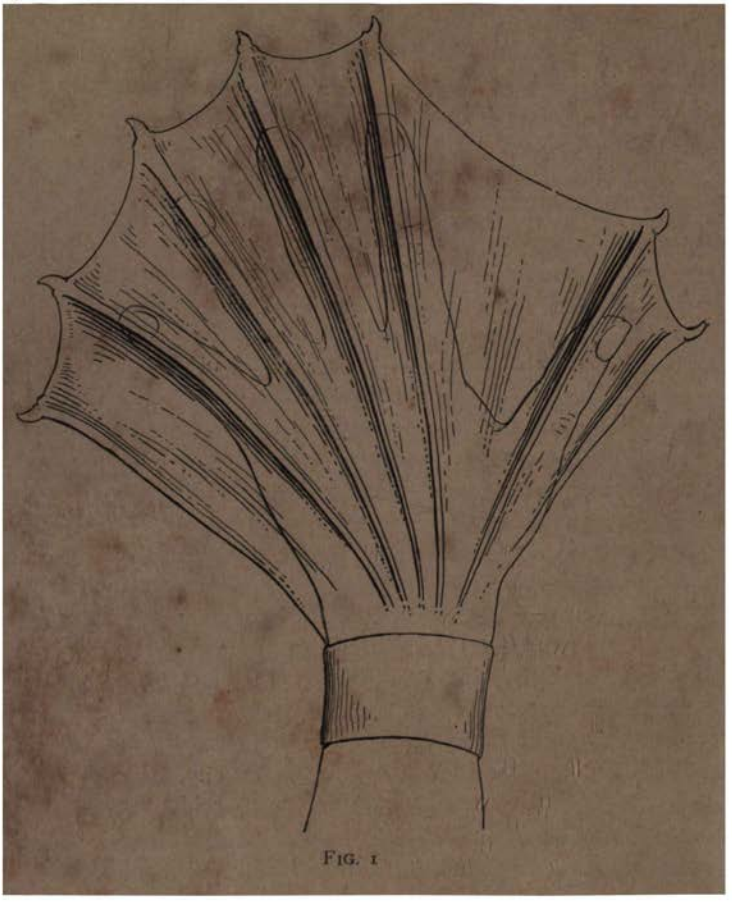


FIG. 1

A considerable amount of attention has been given to the construction of mechanical appliances suitable for use by persons desirous of becoming acquainted with the art of nata-

tion, and a search through the records at the Patent Office abundantly proves how much time, thought, and money have been wasted upon the protection of crude and utterly illogical ideas. The majority of the patents consist of air bladders, buoys, and floats, the inventors of which appear to have lacked even the elementary knowledge necessary for success, and to have employed their minds simply in the construction of some appliance which would keep a would-be swimmer on the surface without regard to the position of the body. Not a few of the patented mechanical appliances may be likened to some of the complications called 'life-saving apparatus,' which work remarkably well in theory, but in practice are absolute failures.

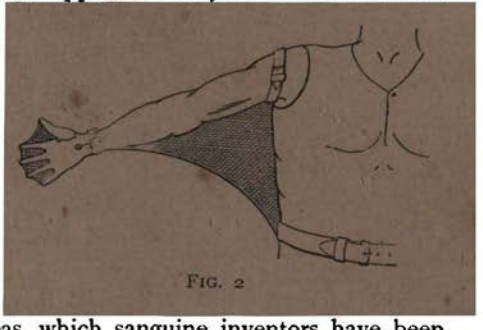


FIG. 2

It would serve no useful purpose to give a detailed account of all the eccentric ideas which sanguine inventors have been at the trouble and expense to protect; but it will doubtless be interesting, and to a certain extent amusing, to give a general idea of the main points which have guided those persons who have endeavoured to benefit the public, and at the same time themselves, by their schemes, and it may be of service to the sport by leading up to the invention of something practical and useful.

From a study of the various patents, it would seem that webbed gloves have been a favourite device. The conception is good, but that most important fact that a swimmer cannot keep the fingers extended in the water, as shown in fig. 1, has been entirely overlooked. Such a position of the fingers would cause great inconvenience, overstrain the muscles, and very possibly result in an attack of cramp. This specimen of a patent is termed 'an improved apparatus for swimming,' but the organisation of

man in no way indicates that Nature intended him to imitate aquatic birds. The object of the inventor seems to have been to remedy what he considered a defect. He suggests in his specification that by spreading out the fingers during the propelling part of the stroke a comparatively large surface will be presented to the water, and, consequently, the propelling action will be greatly increased. This suggestion apparently induced others to try and improve upon the patent by adding a webbed fin as in fig. 2. How this ingenious contrivance would work in actual practice can easily be seen by reference to the diagram, if the reader at the same time brings to mind the way in which the arms are moved by a person swimming. If flying were a common practice, this invention might be useful, but for swimming it is positively ridiculous.

FIG. 3

In addition to the webbed gloves, to further assist progression various attempts have been made to perfect a device consisting of gaiters with flaps buckled to the leg, but most of them are unhappily so constructed and arranged as to be obstacles instead of assistances. For instance, figs. 3 and 4 prove that the inventor had not the slightest idea as to the true motion of the legs in swimming. In order to use his invention it would be necessary to kick straight out from the body, whereas in actual practice the whole of the progressive power is obtained by an entirely opposite action from that which

would cause (or tend to cause, if they kept in working order) these flaps to expand and contract.

The inventor, an Austrian, admits that for a non-swimmer to use these leggings he must be provided with a swimming-belt, but believes that when so buoyed up the leggings will be of great advantage, as they will enable the person using them not only to keep on the surface of the water, but also to move forward with much speed. This contention is open to considerable doubt, as the friction offered by the belt and leggings must counterbalance the advantages that are likely to accrue from the resistance offered by the opening of the flaps—that is, if the flaps will really act as stated.

FIG. 4

A slightly better patent is the somewhat original idea of a British naval officer. It is termed 'an apparatus for facilitating progress in swimming,' and is illustrated in figs. 5, 6 and 7. The apparatus consists of light steel bands or straps fastened round the ankles, to which is attached a wing or fin, hinged and riveted to the band, the wing being secured under the foot to prevent opening too far. The whole of this is buckled round the ankle. Of course the wings are arranged on both sides of the foot, and it is claimed that they thereby enable the swimmer to obtain extraordinary propelling force, and thus swim as fast as a man can walk. This contrivance, like the preceding one, has the same great objection, that it prevents the closing of the legs after the downward stroke which every

FIG. 5

FIG. 6

swimmer accomplishes naturally. It might do very well for treading water, but no swimmer would purchase a machine for that purpose. Among the most extraordinary inventions patented as aids to swimming, is that illustrated by fig. 8. Would any sane person fasten himself up in this apparatus for the sake of a swim? It is hard to imagine anything more ridiculous and impracticable.

To the same list of curiosities may be added the machine represented in fig. 9. It is said by the inventor to greatly facilitate propulsion, by the swimmer working the rod with the folding flaps up and down at a given angle. The flaps, being pointed, are supposed to fold up when drawn in an upward direction, and as soon as pressure is applied downwards to at once extend and offer a resisting surface to the water. It would be interesting to learn whether the inventor's experience justified the expenditure incurred in obtaining the necessary letters patent for the protection of this most extraordinary idea. How anyone could imagine that a body could be propelled by a process of churning, as suggested by this contrivance, passes all understanding; for any person with the slightest knowledge of the water can easily realise what the result would be as soon as the downward pressure was removed. A somewhat more practical idea is that which is represented in figs. 10 and 11. On account of its buoyancy, the inventor claims that it enables the muscular energy of the human body to be applied for the purpose of self-propulsion in a more efficient manner than would prevail in the practice and use of the unnatural method suggested in fig. 9, but it is certain that no swimmer would desire to be encumbered with such a machine.

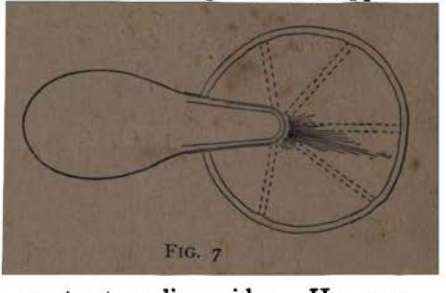


FIG. 7

From time to time a large number of fins, flaps, and other

attachments for the feet and hands have been invented, with the object of diminishing the 'slip' in the propelling portion of the stroke with the hands and feet; but most of them have, as may be easily understood, either failed in the first attempt, or only met with partial success. Searching through the records, one is very strongly impressed with the idea that these inventions had their origin in the brains of those who were quite ignorant of the elementary principles which govern the movements of the limbs in swimming. In the case of collapsible fins, boards, sandals, gloves, &c., it has been proved that the 'drag' necessary to close the blades in returning, preparatory to the downward, or positive stroke, is not compensated for by the reduction of the 'slip' in the propelling movement; further, most of these inventors assume that the feet are sent out straight backward, and return on the same lines, as to employ any one of the inventions shown in figs. 1 to 6 and 12 to 15 would necessitate this action in order to obtain any benefit from

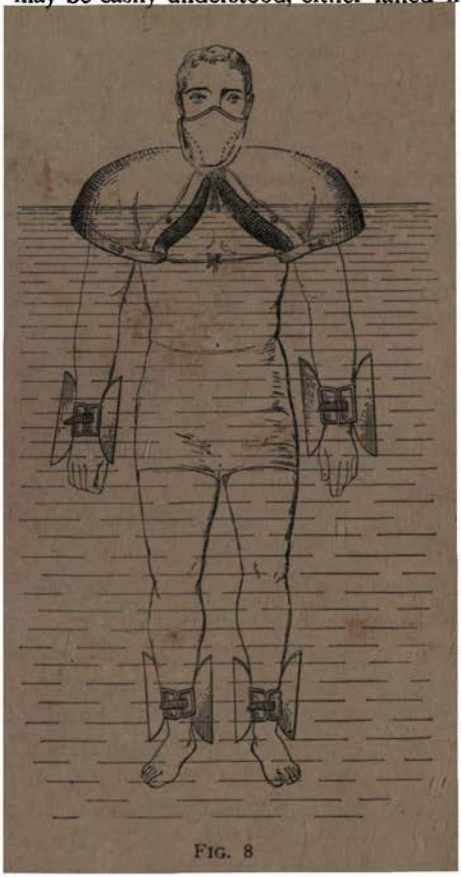


FIG. 8

their use. With some of them swimming would have to be entirely revolutionised, and the user would, in one or two

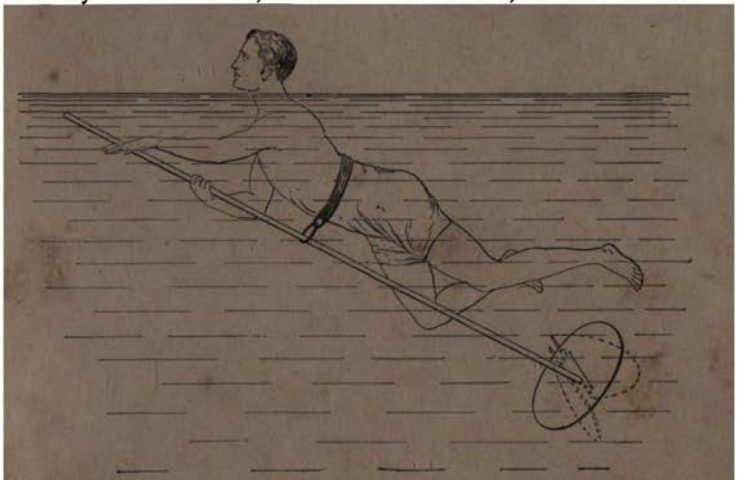
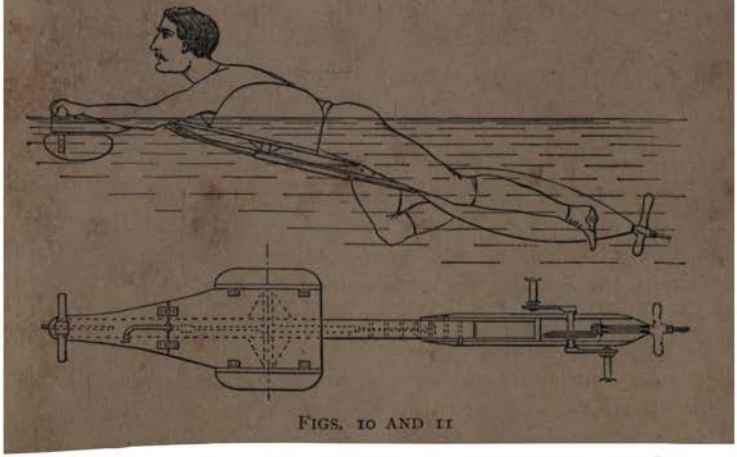


FIG. 9



FIGS. 10 AND 11

instances, have to assume the form of a fish in order to obtain practical assistance. Perhaps this was considered a mere matter of detail; but it is of vital importance, and the ignoring

of it at once proves that the patentees of these curious inventions knew little about the subject with which they proposed to deal.

In 1875 R. H. Wallace Dunlop, a resident at Ealing, took out a patent for swimming plates, or flippers, to be attached to the hands and feet with the object of preventing the 'slip' which is experienced in swimming. This is the only practical device of the sort which has any value. The patentee, being himself thoroughly acquainted with the art, succeeded in producing a plate which at least to a certain extent coincided

FIG. 32

with the true swimming movements; but notwithstanding this his patent has not gained much in public favour, and it is evident that most persons prefer the natural to assisted power in propelling themselves through the water.

Very few swimmers have taken the trouble to learn how to use the Dunlop plates, and the prophecy that swimming by their means was to be quite revolutionised has not been fulfilled. They are now sometimes used for exhibitions at entertainments, but otherwise have fallen into disuse. One most extraordinary circumstance with regard to these is

that even those who can swim well with them do not, as a rule, carry out fully the idea of the inventor as detailed in his specification, No. 3,236, wherein it is stated that the plates are to be attached to the hands and feet as shown in fig. 16. It has, however, proved that there is something still lacking, as most of the swimmers who use them in the side-stroke only use one foot-plate, the reason being that when the leg which goes to the back of the body is drawn up and sent out in the positive stroke, the whole of the resisting power is, naturally, placed against the front of the foot, and the plate, being fastened at the back, then creates a 'drag.' It thus impedes the forward motion, and has, therefore, been discarded on that foot and only used on the foot which is drawn to the front, as in that case the resisting force of the water in the downward stroke comes against the inside of the leg and extends along the sole to the toe of the foot. The plate, being fixed underneath, presents a larger surface to the water, and the motive power is thus increased. A person who swims with the breast-stroke can more readily manage the plates on both feet than one whose practice has been confined entirely to the side-stroke. With regard to the hand-plates it

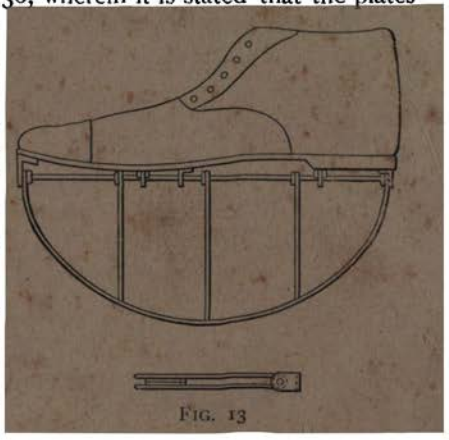


FIG. 13

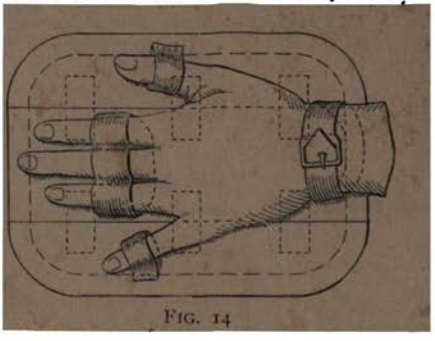


FIG. 14

is a different matter, for the palms of the hands in the side-stroke are usually pressed against the water, and the use of the plates is more readily acquired. But, notwithstanding the claims put forth on their behalf by the inventor and a few friends, 'that they make swimming easier, pleasanter and more effective, changing what is sometimes an exhausting labour into delightful recreation, and that they make a powerful swimmer of a weak one,' they have not become universally recognised or favoured, and it is very doubtful if they ever will, although they are the only serviceable appliances which have as yet been invented. The greatest objections to them are that they cannot be used in a crowded bath, and that for open water they are

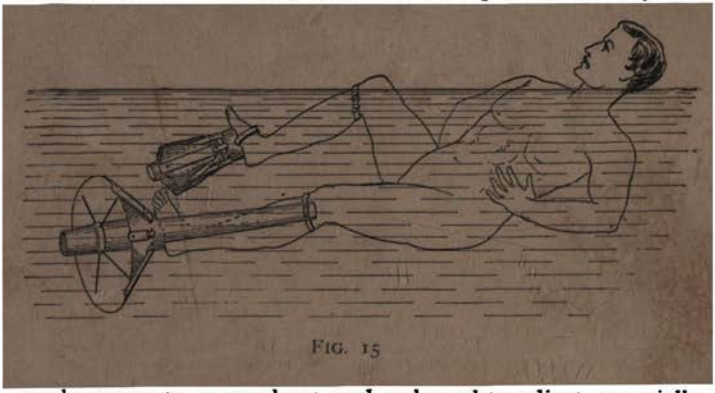


FIG. 15

cumbersome to carry about and awkward to adjust, especially when one has to walk with them on. If great care is not exercised they are liable to split, being in most cases made of thin wood, which will not stand rough usage.

There are innumerable other inventions which have attracted attention of late years, but none of them are worthy of consideration. We may add that all the specifications which have been lodged during the last fifty years were examined by us before making this statement.

Although the patents for appliances to be used by an individual far outnumber those for the assistance of teachers, yet a fairly representative collection of ideas can be made by careful

observation of the methods at present in vogue. Many of them have been adapted from patented inventions, but as a general rule it may be stated that the appliances which have been brought into public notice as likely to tend towards the diminution of the difficulties experienced by teachers have been discarded after a slight trial. Some have apparently been found useful by experiment, but they have not attained permanent success.

Among the first recorded is that of Lambert Cowell, who, in the year 1857, patented a machine with which to teach the mechanical actions of the limbs before entering the water. It was provided with a short couch or padded board of sufficient size for the body to repose on, adjustable to any required inclination. To this were attached four movable frames for the arms and legs to rest on. The framework was intended to act as a guide in the acquirement of the correct movements of the limbs, and was supposed to be so fitted with springs as to give nearly the same resisting power in the propelling stroke as the learner would experience in the water. There is no evidence to show that this machine was ever used to any extent, but it is worthy of remark that, although at this date the side-stroke was in its infancy, the inventor in his specification claimed that it could be acquired by the use of his machine (see fig. 17). There are numerous other patents, but after carefully examining them we find few worth note, and only deal with those aids to teachers which have been found of practical service.

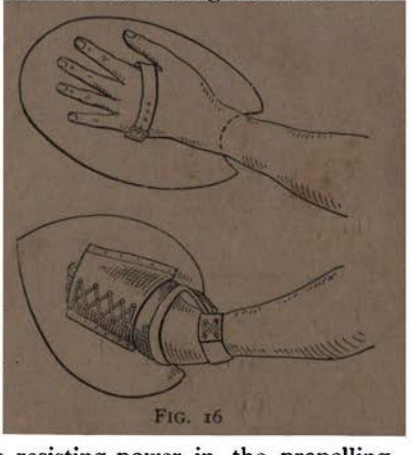


FIG. 16

A very simple form of support, which saved the teacher

much labour, was for a long time in use at the Golden Lane Baths, London. It consisted of a stout wire drawn tightly along the bath, some twelve feet above the water, on the top of which travelled a grooved pulley made with a hollow-rimmed wheel. The wheel rested on the wire, and from it was suspended a belt, by means of a rope, so arranged that it could be raised or lowered at the will of the instructor. The belt, which was made into the form of a loop, was placed round the body of the learner just under the armpits, thus permitting a free use of the arms, and giving sufficient support to a

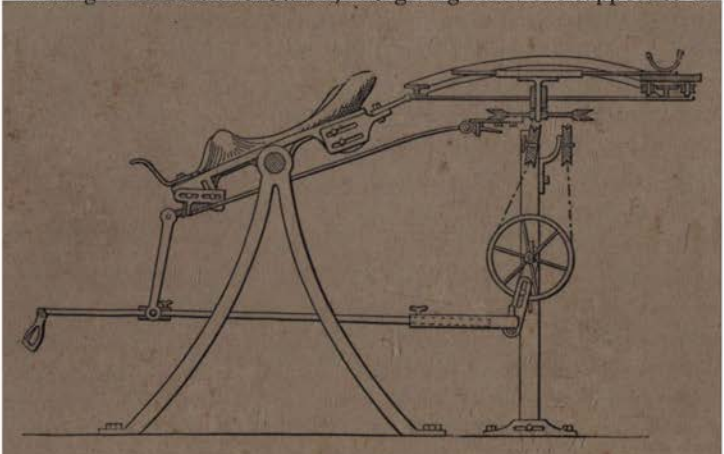


FIG. 17

person in the water. As soon as the learner began to make progress, an easy forward movement could be made, owing to the wheel running loosely on the wire (see fig. 18).

The rope was fastened to the bottom of the wheel by means of a swivel. This allowed the person using the appliance to return without first having to remove the belt, and his practice could therefore easily be taken up and down the bath at will. While the pupils were practising, the instructors walked up and down the side of the bath, giving the necessary hints as to the proper movements of the limbs. This appliance, or a modifica-

tion of it, is used in many baths, but it should find a place in every bath, as it is easy to fix and inexpensive.

A favourite implement is the teacher's pole, which is about six or seven feet long, one and a half to two inches in diameter, and mounted at one end with a ring, through which a cord made into a loop is passed. On this a belt of webbing is strung, the webbing being fitted at each end with a ring, so as to enable the looped cord to slide through it. The instructor holds the pole, and then passes the belt to his pupil, who places it round the body, and then leans forward on his breast to take

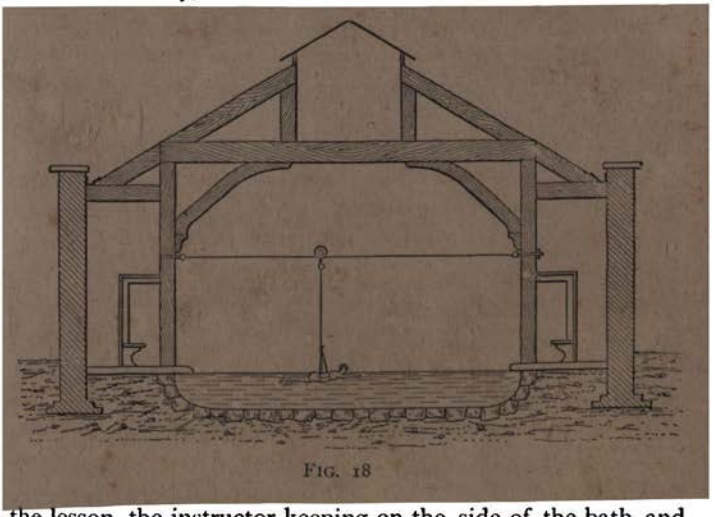


FIG. 18

the lesson, the instructor keeping on the side of the bath and giving the tuition therefrom. The simplicity of this contrivance may account for its very general adoption; but, simple as it is, it produces very fatiguing effects upon the teacher, who throughout the lesson has not only to support his pupil and watch for any incorrect movements, but often has to keep constantly speaking.

This may possibly account for the introduction of a simpler, and perhaps easier, method of teaching which is commonly used in baths and at seaside resorts. It consists merely

of a rope some ten or twelve feet long, with a looped band of webbing at one end, which is passed round the chest of the earner close under the armpits, the rope being usually in front of the chest. The instructor stands on the side holding the opposite end of the rope, and the pupil, after moving out as far as possible, faces towards the instructor, leans forward, and, while being dragged to the side, does his best to go through the swimming movements.

To this method there are two very vital objections. The first is the waste of time occasioned by the pupil having to continually walk back into position—an objection which does not apply to the method first detailed—and the second is the even more serious one that the pupil is only able to take four or five strokes at a time, instead of carefully practising the movements in regular order.

The appliances just mentioned are in common use and known to most frequenters of swimming baths, but among the many novelties recently introduced, the most striking is that of the 'shepherd's crook,' a stick about eight feet long. The instructor places the crooked portion under one arm, close to the body, and thus assists the learner to keep on the surface. The idea is fairly good, and the stick is useful when teaching persons to dive, as sometimes beginners, in their first few attempts, have to be helped to the surface of the water.

Corks, buoys, belts, and air-bladders, as aids to teaching swimming, have received special patronage from inventors. Many of the ideas patented are totally inapplicable for the purposes intended, whilst others are positively dangerous to non-swimmers on account of their construction.

The difficulty of recommending any particular aid of this kind has been recognised by previous writers on swimming, and in nearly every elementary work very strong opinions have been expressed against the employment of such aids. There is, however, a remarkable want of consistency in the arguments, for whilst they generally agree that the use of corks, floats, &c., is inadvisable, they all recommend some form or other

of artificial support as an easy and effectual way of learning. Some of their ideas are exceedingly original, and have surely been expressed without due consideration. It is admitted by almost every writer that a learner needs support of some kind, whether it be the side of a bath or boat, or any of the methods commonly advocated. If that be the case, why should not the support be given by means of a swimming-belt, so constructed that it will place the pupil in the proper position in the water? If it be considered good to suspend a learner from a wire, or place him in a sling, and thus to buoy him up, surely no harm can be done by employing a proper belt? If constructed on scientific principles, and made easy of adjustment, a person can be buoyed up, feeling that he is practically safe from sinking, and can then, with greater comfort and ease, pay careful attention to the instructor. A young man may join a swimming club, but even if the members are able to give him instruction they are not, of course, always ready to do so. They do not mind giving hints to the learner, but the labour of teaching with an appliance often prevents them from competing in their own club events. Most organisations of the kind meet once, or possibly on two evenings, a week, various races and other events being arranged for decision. Usually, the best swimmer in the club is appointed honorary teacher, and if he carry out the duties properly, and give those members who are seeking instruction the necessary attention, he is probably tired when the time arrives for him to compete in the club race, and is unable to do as well as he would have done if he had simply watched the learners instead of dragging them about. If his form in a race be disappointing, he naturally attributes this to the fatigue of teaching; and, as before stated, if the appliances which are considered correct are used the work of teaching is very laborious. What is the result? The learner is neglected, either gives up swimming or else develops a bad stroke, which it may take him years to improve upon, whereas had attention been given to him at first he might have made rapid progress. Many of these cases

have come under our notice, and we firmly believe that if the learners could use some easier method of support, the best swimmers would take a delight in giving the benefit of their experience and training to novices. A few hints from a practised swimmer when a learner first tries to acquire the art are invaluable. The argument against the use of artificial aids has usually been that they give less freedom of action, destroy the spirit of self-reliance, foster timidity, and lead to incapacity; but such condemnation can only apply to the old-fashioned corks, which are strung on a rope, or to the well-known life-preserving buoys, which by reason of their bulk and general construction are not suited for the purpose, as they have no proper arrangement to prevent them from slipping, and thus placing the learner in a dangerous position from which only those who have knowledge and self-control can extricate themselves.

Bladders are greatly favoured by some teachers, but we cannot say anything in their favour, because they have a tendency to putrefy, and quickly become unpleasant to use after having been soaked in the water. Both corks and bladders are usually attached to a rope or band about a yard in length, the pupil being required so to fix the band across the chest as to allow the bladders or corks to pass to the back under the armpits; and thus, when he leans forward on his breast to take the stroke with the hands, he is supported on the surface.

A swimming-belt of a far less bulky nature has recently been tested in various parts of the country on learners in different stages of proficiency, and has been found to answer the purpose remarkably well. It has been constructed in a most careful and scientific manner, is not too large, and does not give an undue amount of support. It is so well made that, when used, it tends to balance the body of the learner in the required position. This belt consists of four six-inch and three nine-inch air-tight cylinders about two inches in diameter. These are laced together with a thin webbing, the three larger canisters being placed in the centre and the smaller equally divided on

either side of them. A loop, which passes round the neck of the learner when in use, is attached, and two long tapes are fixed to each end of the belt. These are passed round the body and tied in front. This kind of belt is not open to the objection which attends the use of corks, buoys, or bladders, as the appliance cannot possibly slip from its position. Its supporting power is sufficient for a person weighing from ten to twelve stone, but its buoyancy can be reduced by the simple expedient of removing one or more of the canisters. This is, in itself, a very great recommendation, because as the pupil gets proficient the teacher may, by reducing the number of air-tight cylinders employed, compel him gradually to trust more and more to his own powers. This belt is a very convenient one for the teacher.

Some kind of assistance, we repeat, is desirable when learning to swim, even if it be only that experience gained by watching good swimmers, or friendly hints from experts. Improvement is then only a question of time, practice, and perseverance. If practice can be obtained without undue exertion, the learner is more likely readily to grasp the fundamental rules which govern fast swimming, and to acquire, at the time when it is most needful, the proper movement of the limbs. Nothing is more disheartening to a man than to improve rapidly up to a certain point, and then be unable to gain the slightest fraction in speed over a given distance. Yet, in most instances, with a healthy body, if proper care had been taken at the start, and careful tuition instead of what may be termed 'water dragging lessons' given, the swimmer would have eventually become faster. Those instructors who are careless in their study of the art are themselves to blame, for it is one of the most difficult tasks possible for a man, after he has once acquired a style, to alter it.

In his work on 'Swimming Drill,' published in England in 1876, Lieut. Torkington, R.H.A., states that

This plan of instruction was first tried, with some measure of success, in the French army, where it was introduced by D'Argy, Chef

de Bataillon, 18th Light Infantry Regiment, and afterwards in the German army, being introduced by Von Wins II., captain in the 7th Brandenburg Infantry, where the following preliminary trials took place :—

Two men from each of three companies of the 20th Fusilier Regiment at Brandenburg were chosen as average men, who could not swim. For four days they were drilled twice a day, for three-quarters of an hour at a time, and on the fifth day, having mastered the motion, they were taken to the bathing-place. Two of them overcame the difficulties at once, and in half-an-hour could swim well ; one man swam on the next day, one on the seventh, and two on the eighth. The last two men had a great fear of the water, and it took them some time to get the necessary confidence.

Two companies of the 32nd Regiment at Erfurt were then taught, and out of 131 men ninety-one learnt to swim well, twenty-five moderately, and only fifteen were untaught during the drill season.

Professor T. J. Hartelius, M.D., Principal Lecturer at the Royal Gymnastic Central Institute, Stockholm, in his work entitled 'Home Gymnastics,' gives a short method of acquiring the art of swimming by means of a land-drill. The work was translated into English by C. Lövring, by special permission of the author, and published here in 1881, and in 1883 the same translation, without any alteration, was published again in Philadelphia. Under the Hartelius method the directions and commands are not so concise and clear as those of Lieut. Torkington, and, further, the space required for the practice of the exercises is much larger. There are faults to be found in both systems ; but if the two were carefully collated with that now used in the German army, a very effective method might be formulated.

No matter how practical, so far as the motions of the limbs are concerned, no swimming land-drill will become popular which requires the pupil to lie across benches or chairs, and at the same time move the arms and legs, as the pressure on the abdomen is then severe. The experiment needs only to be tried to demonstrate its exhausting effects.

There does not appear to be any great record of work accomplished by these drills, but it should be remembered that in England they have never been taken up by swimming-teachers to any great extent. At Portsmouth, some years ago, Torkington's drill was advocated by the Swimming Club as a means of instruction, but it was not given a fair trial.

Swimmers themselves ridicule the idea, but they should not forget that they once had to pass through the ordeal of learning, and that this ordeal is very often far from pleasant if the pupil is only able to paddle about instead of swim; for nothing makes a bather colder than standing about in the water. We do not believe the statements which have been made by the originators of these drills, or on their behalf, that, when once the drills have been thoroughly acquired, the learner will in every case be able to swim immediately he takes to the water; but we are confident from our own experience of the life-saving drill, that when once acquired the movements will be performed mechanically when in the water, and that the land-teaching will enable a beginner to develop very quickly a good leg-stroke, and without much extra tuition adapt himself to the altered conditions.

It is difficult to bring the legs together at the same time that the arms are separated from each other, as well as to assume the position which facilitates floating with the head above the surface, and it is therefore advisable that, before entering the water, some instruction should be given as to the various movements of the limbs.

This can be done in schools much more easily by means of a drill than by a mere lecture, because the boys or girls will at once pick up the points, and be able to practise them during the winter, before the bathing begins. At many schools the pupils are not taught at all, but are sent to the bath in squads, and have to acquire their knowledge the best way they can.

It should always be borne in mind when practising the swimming strokes that every movement must be slowly and carefully executed, the circular sweep of the arms and legs

properly defined, and all haste and flurry avoided. When in the water it is the invariable tendency of all beginners to bend the back, as if stooping, take little, short, jerky plunges with hands and feet, and to forget to straighten the limbs. Soon exhaustion comes on, the learner gasps for air, and his mouth at once fills with water. It is the province of every teacher to point out these difficulties, and the simplest method is by means of a drill, which with youngsters is far more effective than any amount of verbal explanation.

We have therefore framed, from the materials at our disposal and a test of the other land-drills which have been published, the following drill, which can be easily acquired, and which, if practised whilst each point is explained by the teacher, will give every pupil a general idea as to what he should do when in the water, as well as enable him early in his swimming career to avoid falling into a laboured style of progression.

SWIMMING LAND-DRILL

NOTES TO TEACHERS

General Rules

The instructors must be clear, firm, and concise in giving their directions.

The pupils must fully comprehend one part of their drill, and the reasons for it, before they proceed to another.

They must not be kept too long at one part of the exercises.

Short and frequent drills are preferable to long lessons, which exhaust the attention both of the instructor and pupil.

WORDS OF COMMAND

Every command must be distinctly pronounced, and be sufficiently loud to be heard by all concerned.

Every command that consists of one word must be preceded by a 'caution.' The caution must be given slowly and distinctly; the last or executive part must be given sharply and quickly. A pause should invariably be made between the 'caution' and the 'executive' word.

THE DRILL

At most schools squad drill is practised, and it is therefore unnecessary to explain the meaning of the various preliminary orders. The pupils should be formed in one or more lines, as space permits, the tallest being on the flanks and the shortest in the centre. The pupils, if previously instructed in ordinary drill, will 'Fall in' standing at ease. The command 'Attention' should then be given, followed by 'Right Dress.' The squad should then be extended at an interval of three paces, and the swimming drill be begun.

FIG. 19

LEG MOVEMENTS

The instructor should explain the importance of the leg movements, and the need there is for their action to be definite and regular.

The squad being at 'Attention,' at the command 'Right leg—One' the pupils will place their hands on the hips, and will raise the right leg, the heel touching the knee of the left foot, the toe pointing downwards, and the knee brought nearly at right angles to the body (fig. 19).

At the command 'Two,' straighten the right leg, and bring it to the ground one pace to the right (fig. 20).

At the command 'Three,' draw the right leg sharply to the left, and drop the hands to 'Attention.'

The same drill should be gone through with the left leg, the caution being 'Left leg,' and the commands 'One—two—three' as before.

At the command 'Combined leg movements—Right—One,' the pupils will place their hands upon the hips, raise themselves on the ball of the foot, turn out and open the knees to their fullest extent, and sink down until the backs of the thighs rest upon the calves of the legs (fig. 21).

FIG. 20

At the command 'Two,' spring up until the knees are straightened, and immediately take a long pace to the right (fig. 22).

At the command 'Three,' draw the right foot smartly to the left, and come to 'Attention.'

The pupils will by this method learn that the propelling power comes from the downward stroke and the closing of the legs. The drill should be repeated with the caution 'Left,' when the left leg will be extended at command 'Two,' and closed at command 'Three.'

ARM MOVEMENTS

At the command 'Prepare for breast-stroke,' raise the hands in front of the chest, with the thumbs and forefingers nearly touching, palms downward, fingers closed. The elbows should be close to the side, the hands pointing upward (fig. 23).

At the command 'One,' lean the head well back, and shoot the hands and arms out to their fullest extent upward, in the direction in which the hands are pointing (fig. 24).

At the command 'Two,' separate the hands, and bring them round at right angles to the shoulder, turning the hands slightly outward, at the same time describing with each hand a quarter of a circle (fig. 25).

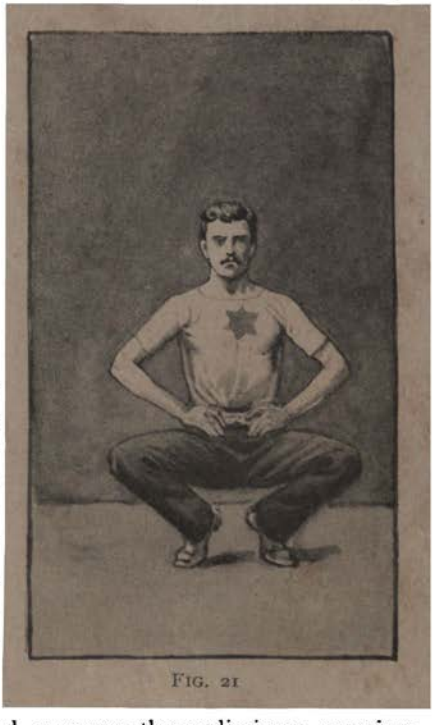


FIG. 21

At the command 'Three,' draw the elbows to the side, and return the hands and fore-arm gracefully, not awkwardly, to the position 'Prepare for breast-stroke.'

The pupil having now gained sufficient knowledge to be of service to him, should be sent to the water for practice. If thought desirable, the combined actions of the arms and legs may be shown on a bench, as illustrated in figs. 26 and 27, but we think that for all practical purposes the preliminary exercises indicated in the drill will be found sufficient, and of service to any person entrusted with the teaching of a large class.

It is impossible to formulate—or, indeed, clearly to understand—the theory which should regulate all attempts to teach swimming without some knowledge of the natural laws, especially of the law of specific gravity, which govern this method of progression.

Specific gravity is the ratio of the weight of a body to the weight of an equal bulk of some other body taken as the standard or unit. In the case of solids, the standard is usually water.

The specific gravity of a healthy person is made up of the combined specific gravities of the various parts of the body, and is therefore a complex quantity. The only portion of the body which is lighter than water is fat, its specific gravity being according to Arnott 0·92 ; and it has been calculated that the proportion of fatty matter in an adult is 5 per cent., or one-twentieth part of the weight of the body. The stated specific gravities of the other portions of the body are as follows :— muscle 1·085, brain 1·04, soft organs generally 1·05, lungs (containing air) 0·94, bone, the heaviest part of the body, 2·01. The lightness of the fatty portion is, therefore, more than counterbalanced by the weight of the bones (about ten and a half pounds in the male, and nine pounds in the female), so that if a human body be placed in the water it has a slight tendency to sink. This tendency decreases in proportion to the quantity of the body immersed, because all those parts which are out of the water, not being supported by water, become so much additional weight to the portion immersed.

FIG. 22

An inexperienced person exhausts himself by quick action and the raising of the body continually out of the water; for as soon as the hands or any part of the body are uplifted the tendency is to sink, owing to the fact that the part raised out of the water at once acts as if a weight had been applied to sink the person. When the whole of the body is immersed, and the chest fully expanded and inflated, the specific gravity differs so little from that of water that if a person turns on the back, and places the hands beyond the head at full stretch in a straight line with the body, and also inclines the head well back, this will suffice to keep him on the surface; but, as a rule, continual practice is required. Several writers have argued that it is natural for man to swim, because it is possible to float with ease when turned on the back with the lungs inflated. A person suddenly immersed cannot get into this position, but struggles and splashes, brings the hands forward, and consequently the head as well. Owing to the weight of the bones of the skull, the head has a great tendency to sink below the level of the water, so that when brought forward muscular force is required to keep it above.

FIG. 23

Various scientists have calculated, from the weight of the water displaced, that the bulk of the adult body is equal to

about two and a quarter to two and a half cubic feet. The weight of this quantity displaced by total immersion is about 156 pounds. There are, of course, various circumstances which cause the specific gravity of the body to vary. If the quantity of fat is proportionally large the specific gravity will be diminished, and a fat person will float more easily than a thin, muscular swimmer. A large proportion of bone tends at once to increase the specific gravity of a person, and it is for this reason that thin men find it so difficult to float. Yet it does not always follow that a man heavily weighted with bone cannot float as well, or as easily acquire the art, as a fat man. If the chest is large and capacious, and the respiratory organs are healthy, a man can, with slight practice, easily counteract the weight of the skeleton.

FIG. 24

Women are of less specific gravity than men, the skeleton is smaller, and there is a greater proportion of fat; hence they can learn to float much more easily. With children the bones are much lighter, the quantity of fatty matter is usually abundant, and they can therefore more easily float, if properly taught, than adults.

A person with a large and capacious chest floats better

than one whose chest is small and contracted. The body of a floating person rises slightly out of the water during inspiration, and correspondingly sinks during expiration. If the lungs are emptied while the face is under water, and cannot again be replenished, the specific gravity becomes greater and the body sinks. Under ordinary conditions, a human body in a healthy state, with the chest full of air, is quite buoyant; and anyone possessed of the knowledge necessary to ensure proper management of the lungs, and imbued with confidence, will float with about half the head out of the water; but to do this it is essential that the head be inclined well back and every other part of the body kept below the surface. If the breathing be unnatural and irregular, the body, owing to the bones and all other portions except fatty matter being of greater specific gravity than water, will sink during every expiration. It is most important that every teacher should know and fully recognise the main principles which govern all attempts to float or propel the body through the water.

FIG. 25

Intelligent instruction in the mechanical laws governing the theory of natation is absolutely the very best beginning of a course of lessons that a pupil can possibly receive. The greatest care should be taken that a teacher capable of

imparting this is employed, because, as soon as practice is entered upon, he will at once, by reason of his knowledge of the many variable positions which the body may assume in the accomplishment of a progressive stroke, be able to check

FIG. 26

faults which, if persisted in for any length of time, would afterwards be difficult to eradicate.

To instruct a person to swim properly is no easy task, and requires a great amount of patience, considerable tact,

FIG. 27

and continuous perseverance ; for in most instances unceasing attention is needed in order that the pupil may acquire a thorough knowledge of the correct movements necessary to attain speed.

CHAPTER III

THE ART OF SWIMMING

THE BREAST-STROKE

THE movements which are necessary in order that a man may propel himself through the water are acquired. If they were natural, there would be no difficulty in learning, because they would be made instinctively, as with quadrupeds, who of course have to follow the ordinary laws of mechanics when they swim. The ease and velocity with which a dog can move through the water appear disproportionate to the means employed. This capability of swimming is common to most quadrupeds.

If a dog be taken as one of the best examples of a swimming quadruped, and his actions be watched, it will be found that his legs move in the same plane as when walking or running, and that the body is poised in the water as under ordinary circumstances on land, with the head projecting. The trunk being situated just above the legs, and balanced on them, the centre of gravity naturally falls immediately above the propelling power. When an animal which has never been immersed before is thrown into the water, it will immediately begin to swim—self-preservation, which is the first law of Nature, in the eternal fitness of things, compelling it to do the exact thing required under the circumstances.

Swimming must, however, be acquired by man, whose hands and feet are nevertheless so formed that they present a much greater surface to the water than those of most animals. Confidence may do much to ensure rapid mastery of the art,

but confidence combined with a correct knowledge of the movements which facilitate floating with the head above water is more than doubly valuable.

There have been cases of persons finding themselves able to swim upon first going into the water, but they are altogether exceptional. Huet, Bishop of Avranches, in his Memoirs, states that, being accustomed like other boys to bathe several times a day in hot weather, it happened that he ventured into a stream without first trying its depth, and immediately sank to the bottom ; but being roused to exertion by the urgency of danger, he struggled so hard with his hands and feet as to raise himself to the surface of the water, and then, finding that he possessed a faculty with which he was before unacquainted, he swam across a deep river on that very day. This little anecdote is mentioned by many writers, and Bucke in his 'Book of Human Character,' after quoting it, says, 'How many thousands of men have been drowned in all parts of the world ! Nine in ten of these might have been saved had they possessed the force of character here described.'

Such reflections may be of service to the moralist, but they are valueless to a teacher of swimming, who has to deal with the undoubted fact that, except in accidental and rare instances, all human beings have to learn swimming. They may learn to swim unconsciously, it is true, but all the same they have had to acquire the movements. Their legs being weighty, they cannot swim by using the ordinary methods of progression on land, and although some of the movements may not be unnatural, they are in any case new.

It is, therefore, essential that each portion of a swimming-stroke should be clearly explained, and its value demonstrated, so that the learner may gain a general idea of the various motions required to make a perfect swimmer. In pursuance of this view, we have decided to illustrate the movements by means of carefully prepared diagrams, and with as few words as possible, so as not to encumber the mind of the learner with too much description.

As before remarked, it is a common practice with writers on swimming to deal with the arm motions first; but, with due deference to their ideas, we intend to begin with the leg motions, because, without doubt, they are the most important movements in swimming, as nearly all the propelling power is obtained by means of the properly directed leg-kick. It is for this reason that we strongly advise the adoption of this, at present, little practised method of teaching. The leg movements should be taught first, rather than those of the arms; for, although swimming could not be carried out so effectually and easily without as with them, their propelling power is but slight compared with that of the legs. In fast swimming the arms should be used more for steering than for propelling; but it is necessary so to practise the art that all the limbs work harmoniously together, none impeding the progressive action of the other, and to succeed in this constant practice is needed.

It must not for one moment be imagined that proficiency in the land-drill will enable a pupil to swim as soon as he enters the water, but it will be of immense assistance to him, as the various actions will be known and naturally attempted. In order that the necessary confidence may be gained, the rope girdle should be used, or, in the case of a large class, a properly constructed belt, because then, instead of teaching each individual separately, the master may instruct a number at one time. The teacher should then repeat the exercises used in the land-drills; but in order that good results may follow, it is absolutely necessary that the practice should not be restricted, and that the pupil should have the opportunity of going through the exercises every day. A few lessons at short intervals are better than a number with long intervening periods. If there be a long interval the pupil is apt to lose much of the confidence gained at the preceding lesson; but if the teacher carry out his work systematically and scientifically, it should not be necessary for any pupil to have more than a dozen lessons in the water, and those who have plenty of pluck should

be taught in far less time. When the pupil is once able to support himself for a few yards, great attention should be paid by him to the leg and arm movement, and then by constant practice he will gradually develop his speed powers. The secret of good swimming is briefly this—no power must be wasted, and progression must be obtained with as little resistance of the body to the water as possible. The propelling stroke of the arms must be compound, the legs and arms must act simultaneously, and their action be smooth and clean.

It is through the simultaneous action of the limbs that the body is sustained and propelled through the water, and unless these fundamental principles are borne in mind, beginners are apt to waste strength in frantic struggles with the arms and legs alternately, and to give up their lessons in disgust. With a clear-minded teacher all this should be avoided.

The stroke must not be made on the surface or the heels kicked up in the air behind; the sweep of the arms and the closure of the legs should be accomplished under the water, with the hands about three inches and the legs about nine inches below the surface. The body should be kept steady, the back slightly hollowed, and the head thrown back in an easy, unstrained position. When taking a stroke there must be no jerky action, and the body should be as nearly as possible horizontal, instead of as it is with many novices, verging towards the perpendicular.

Another point which teachers should impress upon their pupils is that alarm need not be felt if a feeling of fatigue arise. This is common with beginners, and upon its appearance many of them, or their parents for them, at once assume that they have not sufficient physique to become swimmers. Now this feeling of fatigue is quite natural. It is common with good swimmers at the beginning of a season, and in every other sport it is noticeable when a new set of exercises is entered upon. The feeling is, of course, mainly due to the use of muscles which have hitherto not been called upon to any large extent, but this feeling rapidly disappears after a little

practice. As improvement takes place, less power will be required, and the peculiar sinking feeling will disappear, because the strokes and breathing become rhythmic instead of irregular.

THE LEG STROKE

There are three distinct motions of the legs necessary to make a complete leg stroke. The first is, that of the feet being drawn up towards the body; the second, of turning the toes outward and at the same time stretching the legs sideways nearly to their full extent, keeping them well apart; the third motion is that of closing the extended legs sharply, bringing them into a straight line with the body, with the toes extended preparatory to drawing them up again to the first position.

Although these motions may appear perfectly simple to the uninitiated, they have given rise to many diverse opinions as to their respective value in propulsion, and scarcely any two writers on the art are in accord as to which of the three is calculated to have the best effect, and which of them are really the negative strokes.

Some experts are of opinion that the second portion of the stroke is the mainspring of all speed, while others have satisfied themselves that this is not so, and maintain that the third or completing movement must be reckoned as of the highest importance.

Before entering upon the subject ourselves we will deal with the opinions expressed by some of the best known writers of recent years.

Wilson tells us that there is a general belief

that the sudden and powerful kicking out of the feet in such a way as to let the soles strike the water is the movement that aids most directly to propulsion, while in reality this movement is as nearly as possibly can be, if it be not completely and thoroughly, a negative or non-propelling power. The propelling motion is the one following, and in order to give it its proper effect the feet must be stretched wide apart and straight to opposite sides, but not suddenly or with force. The wider the feet are stretched from

each other the better. Once the legs are put out wide they are stiffened, every muscle is set, and with all the strength one can command they are brought firmly and stiffly together. A strong effort is made to grasp, as it were, the water the whole length of the legs downwards.

This theory of the movements of the legs is to a great extent, if not entirely, adopted by Captain Webb, who swam across the Channel. In his book he observes that :

It is a popular fallacy to imagine that the speed of the swimmer in any way depends on the resistance of the water against the soles of the feet. The propelling power in swimming is caused by the legs being suddenly brought from a position in which they are placed wide apart, into one in which they are closed together like the blades of a pair of scissors. In fact, the mechanical power here brought into play is that of the wedge. For instance, suppose a wedge of ice were suddenly pinched hard between the thumb and finger, it is evident that the wedge of ice would shoot off in the direction opposite to that in which the sharp edge points.

In a work entitled 'How to Swim,' the author, the Rev. J. G. Wood, M.A., states that he was a swimmer all his life, thinks there is no art in keeping the head above water, and is of opinion that no advantage can be gained by taking notice of or studying the strokes, as 'there are a dozen different strokes, and each is equally good in its way.' In speaking of leg movements, Mr. Wood says, 'I have seen many books which recommend the learner to place a basin half full of water on the floor, put a frog in it, lie face downwards over a stool, and try to imitate the movements of the frog. This may be well enough for the legs ; but what of the arms, on which the swimmer depends much more than the legs?'

It will be noticed that the last-named writer holds quite the opposite view from that of Mr. Wilson and Captain Webb as to the primary importance of the legs in the promotion of speed, and thinks that the action of the arms is of far greater importance than that of the legs. Again, in a book called

'The Art of Swimming in the Eton Style,' written by Sergeant Leahy, who was the college swimming instructor, we find the following opposite opinion advanced: 'With the soles of our feet we balance ourselves and walk on the land; and with them also we propel ourselves through the water. To use the soles of the feet to the greatest advantage—that is, to strike the water with the soles only—the knees, as I have said, ought to be turned out, and the toes drawn up towards the shins before every kick.'

The idea of Sergeant Leahy and the Rev. J. G. Wood is that the soles of the feet play an important part in the propulsion of a human being through the water, but they differ as to the importance of the leg movements compared with those of the arms; yet both of them are at variance with Mr. Wilson and Captain Webb as to the action of the legs, and as to the portions of the stroke from which the propelling power in swimming is obtained.

Another authority, Mr. Martin Cobbett, expresses an opinion about the leg stroke which almost coincides with our own upon the subject. It will be best to give it in his own words: 'Though the action of the soles of the feet upon the water helps the "drive," the momentum is also given by the "wedge" of water embraced and driven backwards by the action of the backs of the thighs and calves, as they almost come together at the completion of the leg stroke.' According to Mr. Wilson and Captain Webb this momentum is caused by the closing of the legs; Sergeant Leahy and the Rev. J. G. Wood suppose it to be caused by the soles of the feet; but Mr. Cobbett combines these two theories, and makes it plain that in reality progression begins as soon as the legs are sent outward and in a downward direction. That this is so we shall presently show. It stands to reason that the scissor action alone is not all which produces propulsion. If in the 'wedge' or closing of the legs is centred all the propelling power, then why should it be necessary to draw the legs to the body and then to let them glide on and gently outward as far apart as possible,

thus making two negative strokes in order to produce one propelling or positive movement? If the closing of the legs is the only positive motion, why should the legs be drawn up to the body at all? Much time and energy would be saved by simply opening the legs as widely as possible, without drawing them up to the body, for then only one negative stroke would be made instead of two—that is, if the striking out of the legs from the body, no matter how performed, is non-propelling. We are not arguing that the legs should not be spread widely apart, because the wedge of water grasped with the extended legs should be as large as possible. What we do contend is, that as a matter of course the positive or forward motion of the body begins as soon as the feet are being sent out from the body, for the pressure of water in this instance is brought to bear on the front of the foot, up, and along the shin to the knee-joint. This pressure is continued until the legs are nearly straightened. When the legs are extended and the inward or closing action begun, the pressure is transferred to the back of the thighs, sides of the calves, and along the side and sole of the foot to the toes.

To prove this it is only necessary carefully to observe the effect the legs have on the water just as they are sent out wide apart. At that moment, if the kick be properly made, a great swirl in the water will occur, and the body shoot forward. This forward motion will be still further accelerated by the closing of the legs. The swirl which occurs when the legs are being straightened is made by the foot as the leg is extended from the knee-joint when, by the force employed, a flip or a small semicircle is made by the whole of the foot from the ankle.

In this description of the stroke we are to some extent confirmed by Mr. Martin Cobbett, who has noticed the proper action of the feet at the particular point, and describes it in the following terms:

> There is a trick about the latter [referring to the kick] which will come with practice, and I will try to explain it by a familiar simile. Everybody knows the difference between a 'bowl' and a

throw ; in the first the arm being kept rigid, while in the second a certain twist of forearm and wrist gives extra impetus to the delivery. So in swimming, you will, with practice, acquire a somewhat similar action of the knee in straightening the leg which will give an extra flip to the stroke.

It is this 'trick' or 'flip' of the legs, so often found wanting amongst ordinary swimmers, but always to be noticed in experts, which has most to do in propelling the body through the water. There is not the slightest doubt that the theory of the scissor action only, without the extra impetus given by the downward or opening stroke of the legs, is not quite accurate. To contend that the latter is a negative movement cannot, on the face of it, be correct ; how can it? The very fact of sending the legs backward, providing it is not done by pressing the water with the sole of the foot, and the legs are not sent out with a jerk, must tend to send the body in a forward direction.

Our theory is confirmed by Charles Steedman in his famous treatise, published in Melbourne in 1867. The various motions are thus explained by him :

A negative stroke is one in the line of progress.

A positive stroke is one in the opposite direction.

All movements made in any other direction than these two are more or less negative, as they approach or recede from the direction of progress.

All forward movements of the limbs are negative or retarding.

All backward movements *should* be positive or propelling (when they are not so, it is owing to the inexperience or want of skill on the part of the swimmer).

The first principle of correct swimming is, that all negative action should be performed gently, the limbs being so advanced as to present as little resisting surface as possible.

All positive action should be vigorous, the limbs presenting the greatest resisting surface available.

Prior to beginning the practice of the leg stroke, the learner should ascertain that the water is sufficiently deep, so

that when standing it shall reach up to the breast. He should then :

a. Take hold of the steps or bar of the bath with one hand above the surface, and place the other hand against the side or the steps of the bath, some eighteen inches below the surface.

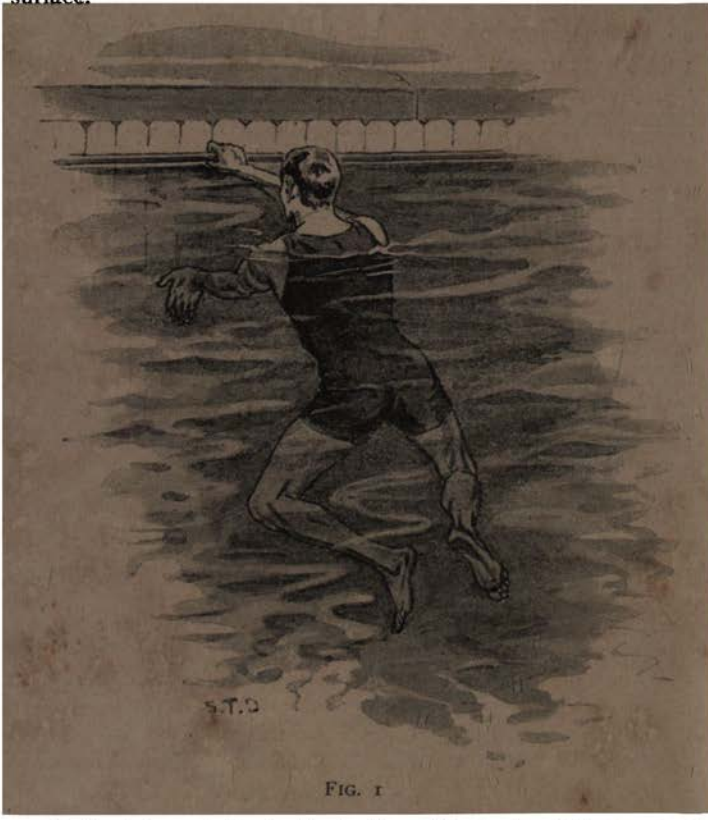


FIG. 1

b. Stretch out the body horizontally to its fullest extent near the surface of the water, and keep the legs closed, toes turned outward, back hollowed, and the head turned back.

These points having been carefully noted, the leg movements should be proceeded with as follows :

1. Turn the toes outward to the right and left respectively, with the heels nearly touching; draw up the feet gently towards the body somewhat above the level of the back, and

FIG. 2

as they near the body separate the feet a few inches. When drawn up, the soles of the feet should be facing upward and be just below the surface, whilst the knees should be turned outward to the right and left, and not drawn up under the body (fig. 1).

2. To develop the next movement the legs must be smartly kicked in the outward direction to their widest extent without straining the thighs; and in kicking out, the lower part of the leg from the knee-joint to the toe should be swept with a vigorous downward and arched or rounded movement from

FIG. 3

the knees, the water being slashed with the whole of the front of the foot as the leg is being straightened. By keeping the ankles loose a flip will be imparted with the foot as the legs are being brought to the third position (fig. 2).

3. As soon as the legs have been straightened, continue the stroke without interruption by closing the legs with vigour

until they nearly touch each other in line with the body, preparatory to bringing them up into the first position (fig. 3).

During this practice the pupil should—

a. Avoid looking behind to watch the action of the feet, and keep the face always to the front when exercising them.

b. Avoid any inclination to bridge the back. Observe steadiness and regularity in each movement, and be careful not to jerk or toss the head about.

c. Perform all the movements of the limbs with as little vigour as possible in accomplishing the outward and inward sweep of the legs, and note that no stoppage takes place during the outward and inward sweep.

d. When the legs are extended, keep the feet and toes turned well back as if standing on tip-toe, and be particular that the sweep of both legs is simultaneously performed. Simply go through all movements with an easy swinging motion.

e. Continue the practices with care and deliberation for five or six minutes at a time, blending the three sets of actions into one smooth and clean mechanical movement.

THE ARM MOVEMENTS

As regards the arm movements some divergence of opinion exists as to the correct position in which the hands should be held and maintained. For instance, Mr. Cobbett says that in the first position the hands should be placed together, the fingers touching, and that after the sweep is made with the arms they should be brought back to the same position. Wilson says 'it is immaterial whether the palms are together or laid out flat,' and that the return of the hands to the front of the chest 'is attained by bending the wrists and dropping the hands until the fingers point to the bottom of the water, the backs of the hands are to the front, the thumbs inward, and the hands are

thus returned to the requisite position sideways.' Captain Andrews, of Toronto, insists upon the hands being placed palm downwards in the first position, but that after separation they should be turned back to back and swept backwards and downwards toward the body.

In our view it is essential that the hands should always, as nearly as possible, be kept flat with the palms downward, as this assists in a great measure in sustaining the body on the surface and also prevents the friction which would naturally

FIG. 4

arise if the hands from the wrists should be so dropped as to present the back of the hand to the line of progression. As far as the holding of the hands flat at the first position is concerned, it is immaterial at the start, but as soon as the body is in motion, the keeping of the hands flat adds directly to progression. It may seem but a slight matter, but it is these small details, carefully studied, which tend to accelerate the speed of swimmers.

In order to make our instructions perfectly clear we shall

divide the arm movement into three actions, as in the leg stroke :

1. Draw the elbows nearly to the side, at the same time bringing the forearm and hands up to the front of the chest with the palms of the hands downwards near to the surface of the water, fingers extended and closed, forefingers and thumbs nearly touching (fig. 4).

2. Push the hands forward directly in front of you till the arms are at their full extent, still keeping the hands about two

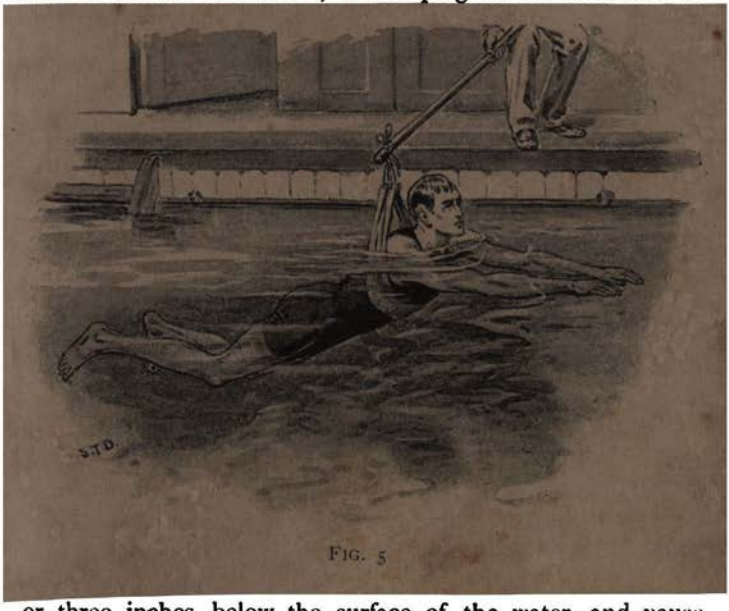


FIG. 5

or three inches below the surface of the water, and pause or lay on slightly before beginning the next movement (fig. 5).

3. Turn the palms of the hands slightly outwards and take a backward sweeping stroke, and continue the pressure until the hands and arms are brought nearly to a right angle with the body in line with the shoulder (fig. 6). Then gently fold the arms back into first position. As soon as the pressure

of the backward sweeping stroke ceases, the hands should be immediately flattened.

THE COMPLETE SWIMMING STROKE

For the practice of the leg and arm movements combined, the learner should be taught in a 'girdle' or a belt, and should

FIG. 6

carefully observe the foregoing instructions. The practice should be as follows :

1. Steadily incline the body to a horizontal position, with the arms and legs closed and extended, palms downward, the feet outward, the head inclined backwards, and the back hollowed.

2. Bring the arms backward as shown in fig. 6, and as the hands are brought to the front of the chest draw the legs upward (fig. 1).

3. Then quickly kick out the legs, blending Nos. 2 and 3 leg actions into one, and as they are extended shoot forward

the arms (No. 2, arm movement). When the arms are fully extended the legs will be closed, and the body will sensibly travel by the impetus gained.

Care should be taken that the breathing is regular during swimming, as thereby depends much of the pleasure to be gained from the pastime, and if the learner will remember to inhale when making the backward sweep of the arms only, much of the difficulty generally experienced will be overcome. Expiration should be carried on during the other portions of the stroke, with a kind of gentle blowing of the air from the lungs, and then when the arms come back, the mouth being at its highest point above the surface of the water and the chest expanded, a plentiful supply of fresh air can be obtained. A mistake often made by beginners is that of holding the breath during several strokes, which exhausts and tires the learner far more than if he were to breathe properly and employ twice as much labour. If careful attention be paid to the management of the breath, the staying powers of the swimmer will be sensibly increased after very little practice. Above all, the breathing must be free, regular, and natural. There must be no gasping, and the lungs should be inflated at each stroke.

Failing a support, the learner should steadily incline the body forward, at the same time advancing his arms to the second position of the arm movement. When well forward he should bring the arms back to first position, and this will raise the feet from the bottom. Beginning with a short kick, he should then endeavour to go through the movements as described.

After accomplishing a few strokes a good plan is to place the feet against the side of the bath, and with the help of a good push off to attempt to reach the other side.

By a careful compliance with the foregoing instructions, the timidity which usually bars the learner's progress should be got rid of.

Having learnt to swim he should, before any faults in style

become too strong for eradication, attach himself to a good club, wherein he will have the means of gathering many useful hints from practical men.

THE SIDE-STROKE

This method of progression through the water was at one time considered the best style of swimming for racing purposes, but the advent and perfection of the over-arm and 'trudgeon' strokes have caused it to become almost obsolete. It is now rarely taught, or even practised, except for the purposes of exhibition. The leg-stroke in side-swimming is similar to that which will be described under the heading of 'over-arm swimming,' the latter style being an improvement on the former. Before side-swimming was perfected, the breast-stroke kick of the legs was used by many swimmers, and although the body was upon its side when the upper arm was being drawn through the water, the recovery was made upon the breast. In a treatise on the 'Art of Swimming,' by Captain P. H. Clias, which was published early in the present century, the system of side-stroke swimming taught by the author, about the year 1809, is thus described :

> The body is turned either upon the right or left side, and the feet perform their usual motions. The *arm from under the* shoulder stretches itself out quickly, at the same time that the feet are striking. The other arm *strikes* at the same time with the impelling of the feet.
>
> The hand of the latter arm begins its stroke on a level with the head. While this hand is again brought forward in a flat position, and the feet are contracted, the stretched-out hand is, while working, drawn back towards the breast, but not so much *impelling as sustaining*. As swimming on the side presents to the water a smaller surface than on the waist (breast), where rapidity is required, the former is often preferable to the latter.

It may be of interest here to state that the grandsons of Marshal Blücher were taught this system by Clias. Since then numerous persons have posed as inventors or originators of

the stroke, but, as we have previously pointed out, some such method was known to the ancients.

Gradual improvement in the leg-kick led to the development of the arm movement. The upper arm was usually carried through the water for the recovery in a half-bent position, and, in making the propelling stroke, the palm of the hand was turned towards the feet, and swept in a line from the forehead to the hips, within a few inches of the body. As soon as the arm approached the hips, the recovery movement was begun, the arms being folded and pushed through the water with the hands turned sideways, thumbs uppermost. Another method of propulsion with the upper arm was that known as the 'scull' stroke, the arm then being stretched to its fullest extent, and swept round in a semicircular direction from the head to the hips, the recovery being effected in the ordinary way.

Side-stroke swimming may be used when the first few attempts are made to acquire the over-arm stroke, as it will give the learner the opportunity of gradually passing from the breast to the side, and be more likely to teach him the exact position in which to keep his body in the water, in order to gain the greatest momentum. The chapter on over-arm swimming should, however, first of all be studied, so that the principles of the modern leg-kick may be known.

THE 'OVER-ARM' SIDE-STROKE

The old-fashioned over-arm swimmer lay on the water, with his shoulder-blades at right angles to the surface, and the upper arm when pulling through the water was almost entirely immersed, while in the recovery its upper and heaviest part was above the surface. Careful observance of this fact showed that it was advisable, in order to attain extra speed, to swing the arm forward through the air, as the resistance is less, and the difference as regards the general buoyancy of the body very small.

There are at present two recognised styles of over-arm swimming. The first is that represented by such famous exponents as Horace Davenport, for many years amateur champion of England, and James Finney, the celebrated professional. The new school includes E. T. Jones, J. Haggerty, and J. J. Collier among the older division, whilst J. Nuttall, W. Evans, S. Greasley, J. H. Tyers, and R. A. Crawshaw are worthy followers of their famous predecessors. The names of all these men figure in the records of the sport, and it is remarkable that most of them come from the inland towns of Lancashire. Their systems of swimming have revolutionised the speed rates, and for a number of years the North of England has in this respect been able to hold its own against all comers.

In the old style of over-arm, the leg-kick is practically a mere modification of the breast-stroke kick. The body is turned over a good deal on to the chest, and at every stroke moves forward with a spurt. The best style is undoubtedly that of the new school. In this, the swimmer lies completely on the side, and the leg-stroke when viewed from above looks almost like a runner in full stride. The upper or over-arm, the lower arm, and the leg-strokes merge one into the other, and the body thereby moves forward at a perfectly uniform rate. There is a regular swing with this stroke, and when properly acquired it is far more useful and less fatiguing than the breast-stroke.

The best exponents of the new style are Nuttall, Collier, Standring, and Tyers, and beginners should take every opportunity possible of seeing any of them in the water, for students will learn far more by watching one of these experts swim twenty yards than by reading any written description of this most difficult stroke.

It is a matter of choice on which side the body is turned, but the majority of swimmers turn on their right side, the reason advanced being that the action of the heart is thereby unimpeded, and the organs of digestion kept free from pressure. For the purposes of clear description it will be best to

imagine that a swimmer is in the water lying on the right side. At the start, the lower arm should be pulled downwards towards the hips, in a plane perpendicular to the surface as in fig. 7, the fingers being kept closed and the hand flat, so as to present a large surface to the water. When this stroke is finished, the hand should be turned quickly, palm upwards, so that together with the lower part of the arm it cuts the water

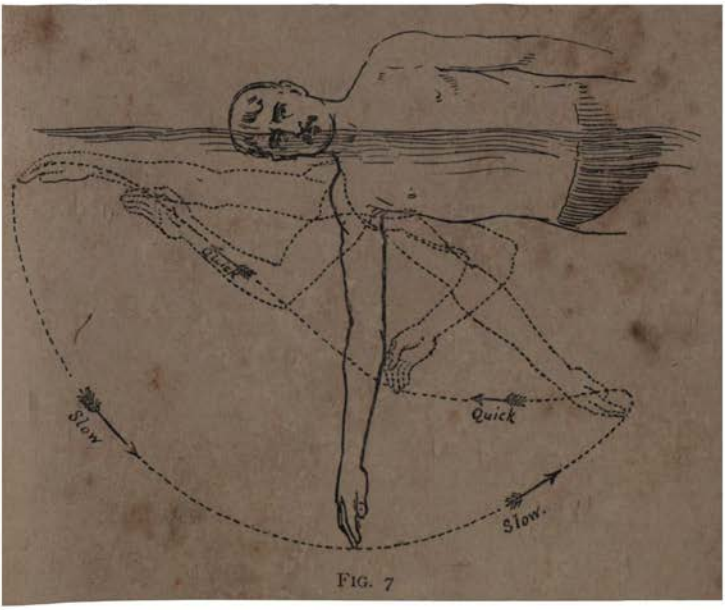


FIG. 7

sideways, the arm being almost bent double. Then, as it is shot forward, the hand is gradually turned from palm upwards to palm downwards, until, when it arrives at its position in front of the head, and almost above the surface, it is ready for the next stroke. The recovery ought to be effected much more quickly than the 'pull,' as in the former the water practically only offers resistance to the upper part of the arm; but during the downward stroke the whole arm and hand have to be dragged through it.

The upper or left-arm stroke is started when the downward stroke of the under or right arm is finished. It begins about half a foot in front of the face (fig. 8). The arm is slightly bent to work clear of the chest, the palm and thumb pointing downwards. The pull in most cases is taken with the arm bent a little as it enters the water, but in others, equally good, the hand is brought towards the chest, and then, with the arm bent at right angles, swept back close to the body, the arm

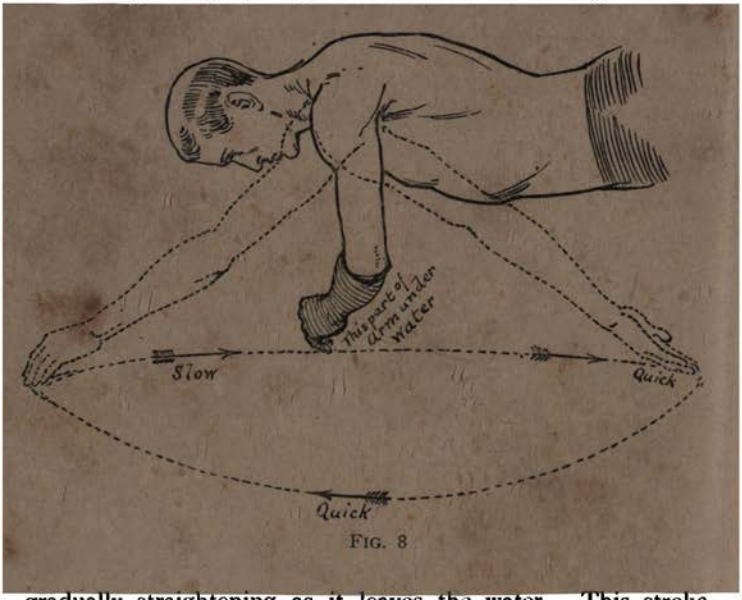


FIG. 8

gradually straightening as it leaves the water. This stroke should not be made too long, either at the beginning or at the finish, as the effect of the power applied is greatest when the hand is opposite the shoulder. At the end of the pull, that is, when the hand is opposite the waist, it should be brought smartly out of the water, and carried quickly forward through the air to recommence its stroke.

When the upper arm is about opposite the shoulder in its pull through the water, the legs should begin to open for the

leg-stroke (fig. 9). They should be in position for beginning the kick when the hand leaves the water, and the kick should be completed and the legs straightened before the left hand is replaced ready for the next stroke.

A peculiar screw-like leg movement is the distinctive and most important feature of this style of over-arm swimming.

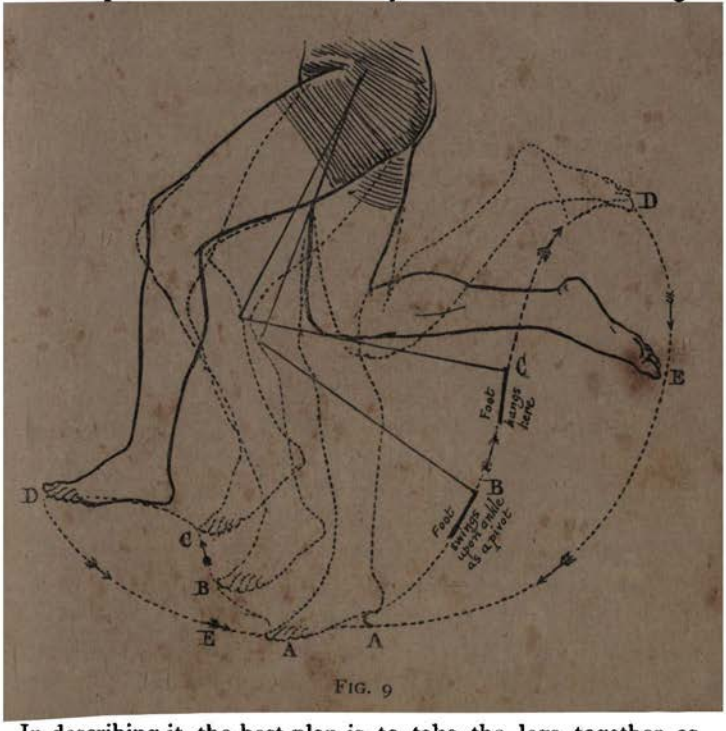


FIG. 9

In describing it, the best plan is to take the legs together as at the completion of a dive, and after the body has been turned on the side. The legs are opened, and brought together again simultaneously, the left or upper leg being kicked a little forward, the knee slightly bent, and the foot kept in its ordinary position, not allowed to hang free. The right or lower leg is bent double until the foot touches the thigh, the

tendon Achilles acting as a cut-water, and the foot swinging as on a hinge, so that there is really very little resistance. In the effective part of the stroke the left foot is sent a little forward, and then the whole leg is straightened with a stamp at the same time as the right leg meets it with a vicious kick. In the first part of the kick, the whole of the calf and instep of the right leg whip through the water, and in the second part, the wash from the top leg meets the swirl from the lower leg and sends the body forward. Both feet should be kept near the surface, except at the end of the stroke, when the right foot dips to come just under the left.

The time of the different parts of the over-arm stroke will be best understood by a glance at the diagram (fig. 10).

The head, for fast bath swimming, should be kept straight on the shoulders; but in open water it is better to keep it well up on the top shoulder. In a bath, it is possible to swim straight by looking at the side; but in open water, some mark must be fixed upon at each end of the course, as high and as conspicuous as possible, so as to be of use as a guide. The body is sustained by the downward pull of the under-arm, whilst the sole of the upper foot, and the calf and instep of the lower leg, all act as inclined planes to force the body and legs to the surface.

Breathing should be regular, and in time with the stroke The egress of air should be stopped at the back of the mouth by the tongue and uvula, instead of at the lips. In the latter case, if water passes the lips, it is bound to go down the throat, whereas if the proper way is practised, use becomes nature, and the stoppage of the water seems to occur almost involuntarily; it washes in and out the mouth quite naturally. Inspirations are taken during the forward swing of the top arm, and expirations made from the mouth through the water at will, or else through the nostrils.

There are, of course, slight variations from the orthodox style of swimming over-arm. For instance, one of the best exponents, E. T. Jones of Leeds, used to take a decided kick

with the upper leg, making a kind of double kick, yet giving time for the top leg to create a wash to meet the lower one; but these variations need not be detailed, as hardly any two men swim exactly alike.

A confirmed breast-stroke swimmer, unless he has very constant practice with a good over-arm swimmer, will have great

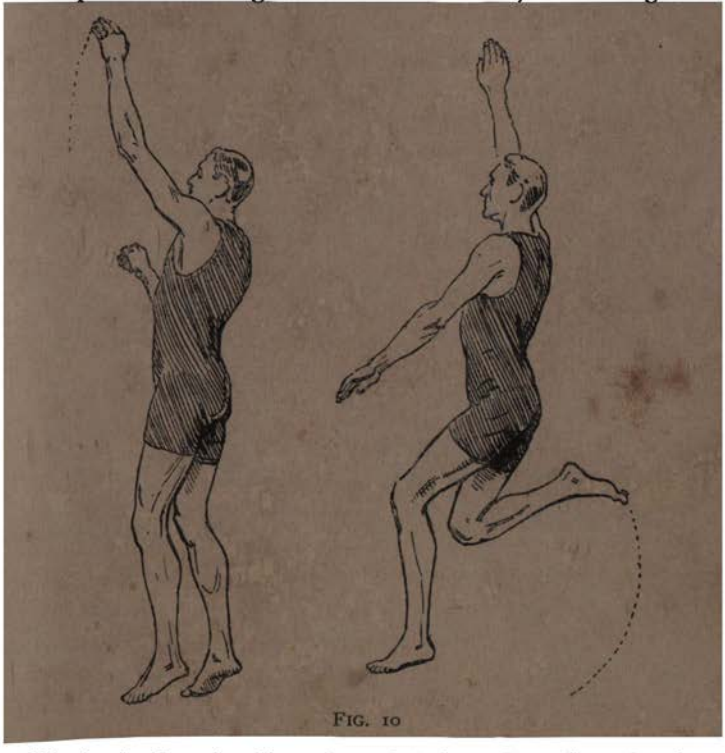


FIG. 10

difficulty in changing his style, and it is perhaps best for the learner, after practising the breast-stroke until he can swim 100 yards, to drop it completely until he has acquired the over-arm, when he can perfect his breast swimming. With one or two notable exceptions, the best-known over-arm swimmers have never been fast breast-stroke swimmers, the alteration in

the leg-kick after long practice in another style forming the difficulty.

In breast swimming each leg goes to the side. In over-arm swimming the top leg goes to the front, the lower leg behind, whilst the body must also be kept absolutely on its side, and not allowed to roll over as the upper arm is brought forward.

The best method of learning is to take hold of the rail at the side of the bath with the upper hand, and place the lower hand beneath it and against the side. The body should be turned on the side, fully extended, and the leg-movements as described should then be gone through. After considerable practice a few strokes should be attempted, but the upper arm should not at first be taken out of the water, or farther in front than the shoulder. If the body be kept on the side, it is impossible to take a breast-stroke kick without sending one leg out of the water, and it is, therefore, advisable that a friend, or preferably another learner, should be asked to see that the side position of the body is maintained throughout the practice.

THE 'TRUDGEON' STROKE

Many forms of this stroke are adopted by sprint swimmers and water-polo players. It is a very fatiguing method of progression, and rarely used for distances over 200 yards; but for short races it is constantly preferred to the ordinary over-arm stroke. It was first brought into prominence in England by J. Trudgeon, who acquired his knowledge in the rivers of South America, but there are many references to it in early works on the subject. For instance, Clias describes it under the title of 'The Thrust' in the following terms:

At first, the swimmer lays horizontally upon his waist, and makes the common motions in swimming. He then simply stretches one arm forwards, as in swimming on the side, but remains lying upon the waist, and in a widely-described circle he carries the other hand, which is working under the breast, towards the hips. (This circle is in its direction the very opposite of that observed in swimming on the side.) As soon as the arm has completed this

movement, it is lifted from the water in a stretched position, and thrown forwards in the greatest horizontal level, and is thus sunk with hand flat into the water; while the swimmer thus stretches forth the arm, he with the other hand stretched as wide as possible, describes a small circle in order to sustain the body; after this, he brings his hand in a largely-described circle rapidly to the hip, lifts the arm out of the water and thrusts it forward, &c. During the describing of the larger circle, the feet make their movements. To make the *thrust* beautifully, a considerable degree of practice is required. This mode of swimming is applicable in cases where a great degree of rapidity is required for a short distance.

Trudgeon's first appearance was a sensational one. In the 'Swimming Record' of 1873 the editor, Mr. R. Watson, in describing a race which took place on August 11 of that year, says:

A surprising swimmer carried off the handicap—we allude to Trudgeon; this individual swam with both arms entirely out of the water, an action peculiar to Indians. His time was very fast, particularly for one who appears to know but little of swimming, and should he become more finished in style, we shall expect to see him take a position almost second to none as a swimmer.

I question, indeed, if the swimming world ever saw a more peculiar stroke sustained throughout a 160 yards race. I have seen many fast exponents retain the action for some distance, but the great exertion compels them to desist, very much fatigued. In Trudgeon, however, a totally opposite state of things existed; for here we had a man swimming apparently easy, turning very badly, and, when finished, appearing as though he could have gone at least another 80 yards at the same pace. His action reminds an observer of a style peculiar to the Indians; both arms are thrown partly sideways, but very slovenly, and the head kept completely above water.

This opinion was well borne out, for Trudgeon afterwards became one of the speediest sprint swimmers of his time, and his peculiar action became commonly known as the 'Trudgeon' stroke. The body is lifted at each stroke, and at each swing of the arms seems to be hurled forward, a considerable swirl of the water occurring as each movement is finished.

Many of the swimmers who copied Trudgeon afterwards found that it was less laborious and equally as fast to use a double over-arm stroke, as instead of the chest and head being raised clear of the water, they were able to keep the body more horizontal and thus use the power which would otherwise be required to raise the chest from the water for propulsion. The leg-kick is the same as that in the ordinary over-arm. When the kick is taken the body is on its side, and as the recovery of the legs is being made then one arm is making a positive stroke while the other is being brought into position out of the water, and the body turns on to the breast. Practically it is this : Instead of the under-arm being moved in the ordinary manner, it is thrown out of the water beyond the head and swept round to the side, this action causing the body to turn over on to the breast. Meanwhile the upper hand has gone forward ; as it is being pulled through the water and the leg-kick taken, it turns on to the side again. When swimming with the polo ball, the body is kept on the breast all the time as in the original style.

Modifications of this stroke are in vogue among the Indian tribes of North and South America. The style is well known in other parts of the world, and very probably originated from those who are compelled to use their swimming abilities in rough water, such as surf boatmen. The first secretary of the West End Amateur Swimming Association, Mr. F. J. Lawton, who went to West Africa in 1891, in writing to us from Grand Bassam, says :

No white man ever swims here in the sea for pleasure, the surf being very dangerous ; it is about 15 or 20 feet high sometimes, and has a strong under-current. The lagoon is scarcely tempting enough for Europeans, besides being infested with alligators. The natives, men, women and children, swim like fish, and fairly revel in the surf, but what struck me particularly was the fact that they all, even to the youngsters of about five years of age, seem to have adopted the trudgeon stroke to the exclusion of every other style. Now I have always understood that the introduction of that stroke into England was of a comparatively recent date, and it

seems queer that it should have been used here, which you might say is outside the limits of civilisation, for generations. It is amusing to see the canoe men in the water. They all wear coloured handkerchiefs in the fashion of polo-caps. When a cargo of spirits is being landed, they generally manage to capsize a boat-load or two, the surf breaks the cases, and then an animated bottle-diving competition takes place.

SWIMMING ON THE BACK

The great importance of back swimming has been little recognised by swimmers. Very great attention is paid to the faster methods of progression, championships and ordinary races for every conceivable distance having been promoted; back swimming, however, the knowledge of which is of primary importance in saving life, has been utterly neglected. Fast side-stroke swimming is of small value in saving life unless other methods of progression are known to the swimmer, and it has not unfrequently happened that the purely speed swimmer has had either to release his hold of a drowning person or else to call for help himself.

Back swimming can be easily acquired by any person able to swim on the breast, for the movements are almost identical, and it is surprising that the leaders of the sport in England, who are all practical swimmers, have not before this made some effort to encourage regular practice in that branch of the art which has proved of eminent service in saving life.

The best method of learning back swimming is to stand in water which reaches up to the waist, then spread the arms out on a level with the shoulder, fall gently backwards on to the water, and as the legs leave the bottom take a slight spring so as to impart impetus to the body. In the first stroke the arms should be brought round almost to the side, the hands being kept in such a position that the thumbs are nearest the surface, and at the same time the leg-stroke should be carried out in exactly the same manner as in breast-stroke swimming. In bringing the arms back to first position the hands should be

turned palm downwards, so as to offer less resistance. The more perfect form of this method is to make a sculling motion with the arms, the hands being brought towards the sides of the body during the effective portion of the leg-kick, and pushed outwards when the legs are being bent ready for the next kick. The tip of each hand describes a sort of double loop.

The fastest and best style of back swimming is performed in the following manner :—In diving to begin the stroke, as soon as the body has entered the water it is turned face upwards with a jerk, the arms still being kept extended beyond the head. Upon rising to the surface the arms are brought round on either side, fully extended, with the hands flat and at

SWIMMING ON THE BACK

right angles to the surface so as to catch the water. Each hand thereby makes a great sweep of a third of a circle. While this is being done the legs are bent ready for the kick. The hand, thumb upwards, is brought out of the water about six inches from the hips, and is taken a complete semicircle through the air, the arm meantime being kept straight. As the hand travels forward it should be turned round as far as can be managed in order to bring the palm slightly downward and the thumb upward, so that the hand may catch the water like the float of a paddle-wheel.

The hands, when entering the water, should be from eighteen inches to two feet apart, not close together, for the

body would then be retarded slightly at the beginning of the arm-stroke. The legs should be kept near the surface, the head resting in the water. As in breast swimming, there are two movements in this stroke. While the leg-kick is propelling the body the arms are being recovered. All inspirations are taken during the first portion of the arm-stroke. A powerful leg-kick is important, but when the arms are used nothing is gained by an over-long sweep. The recovery of the arms should be accomplished smartly, as the less time they are out of the water the better for the buoyancy of the body. A slight variation of this method is made by bending both arms at the elbows as they leave the water, and carrying them through the air thus bent to recommence the stroke instead of keeping them straight. This is useful when swimming a distance.

The same method of recovery of the hands is used when swimming on the back under water, but in the propelling movement the arms are brought more towards the surface than to the side, so that the body may be kept beneath the surface.

There are many slightly different styles which are practised, such as taking each arm-stroke alternately with a kick of the legs between, or swimming with the hands on the hips, folded across the chest, or behind the back.

When saving life the body cannot be kept in the same position as when swimming on the back in the ordinary fashion. The legs have to be inclined towards the bottom at a greater angle, in order to be moved freely without coming into contact with the body of the drowning person. The action of the thighs is necessarily limited, and the best method of swimming when thus hampered is to move the legs from the knees downwards in semicircular sweeps, never actually closing the legs together. If the ordinary back-stroke kick of the legs be used, the rescuer will in his efforts to retain hold of the drowning subject sink, at intervals, below the surface. It is, therefore, important that every swimmer should practise the life-saving kick, so as to be able to render assistance when

necessary, and to learn it the arms should be folded across the chest, and the legs kept in continuous motion by short sharp kicks and never quite closed together.

One of the fastest back swimmers in England at the present time is Mr. R. A. Crawshaw, of the Mayfield Amateur Swimming Club, Manchester, to whom we are indebted for many valuable hints on the subject. This gentleman, who has covered one hundred yards on his back in 1 minute 20⅘ seconds, is a capital exponent of speed swimming in the Lancashire over-arm style, and had the honour of being included in the English International Water-Polo team of 1892.

UNDER WATER

The ability to swim under water is often of service, but the encouragement of competitions in this branch of swimming is extremely inadvisable, inasmuch as the competitors never know when to desist when a prize is in view, and are often affected in a dangerous manner by long immersion.

Swimming under water must be practised by experts who desire to give exhibitions, but immersion should never be prolonged in the hope of reaching any definite point or swimming any certain distance before rising to the surface. In back competitions it very often happens that the swimmers have to be fetched out of the water, whilst those held in lakes, rivers, and the sea have time and again ended in disastrous accidents. The swimmers have gone on even after the warning pain which strikes to the back of the neck has become pronounced, gradually lapsed into a state of insensibility, and been drowned, whilst the anxious spectators have been frantically watching for their re-appearance. Many others have been caught in weeds and been unable to get free, and these mishaps have led to the Amateur Swimming Association of England publicly discountenancing under-water distance swimming competitions.

We have ourselves frequently watched these dangerous

contests in baths, and have, on more than one occasion, observed idiotic competitors overstrain themselves and bring on nearly fatal complications. It is painful to watch a swimmer struggling on against fearful odds, in the hope of beating the best performance of another man and thereby gaining a paltry prize. The leg action gradually gets slower and slower, the arm action short and strained, until at last the arms just move slightly from the shoulder line, the body rises about a foot and then sinks to the bottom motionless. A *contretemps* of this nature at an entertainment is sufficient to cause those of the spectators who are not swimmers to abjure all thought of learning, and the unfortunate competitor himself may do lasting injury to his lungs. This fact is so well known and so apparent to any person of common sense that it is extraordinary to find mere youths at school being compelled to pass tests in distance under-water swimming.

The great advantage of being able to swim under water is that a swimmer may then be enabled to reach the body of a drowning person, or stay under long enough to disentangle that body from weeds or other obstruction ; but it is far better to practise it by picking up single objects from a reasonable depth than to swim against time or distance.

Naturally the ability to swim under water varies considerably, and some men can move beneath the surface for a remarkable time and distance. Exhaustion, of course, ensues much sooner when the body is in motion than when stationary, and the time records for swimming under water are much lower than those for staying under water. The best authenticated distance performance known to us is that of 340 feet by James Finney, in 1882. This swimmer has made under-water performances his speciality, and has therefore had considerable opportunity of obtaining perfection. In 1887, an amateur, William Reilly, of Salford, swam 312 feet under water, whilst in 1890, a boy between nine and ten years of age, named Archie McMillan, swam 132 feet under water in 51¼ seconds. About the outside limit of endurance when swimming under

water is a minute and a half, but very few persons could approach this time. The pearl-divers, of whose ability so much is often written and heard, do not swim under water, although they work on the bottom. Their maximum, according to reported observations, appears to be about two minutes; but on rising to the surface they are exhausted, and blood often flows from the nostrils. In swimming under water the ordinary breast-stroke is almost invariably used. The head is depressed so that the chin touches the breast, and when it is necessary to rise a deflection of the head backwards at once causes the body to come to the surface. Side-swimming can be accomplished, but it is very difficult, a scoop upwards having to be made with both hands at the finish of each stroke, and this of course greatly retarding progress.

In order to keep a straight course, care should be taken that the head is not taken to the side, or else the body will travel in the direction towards which the head is pointed. When swimming a long distance the body should be kept as near the surface as possible, as the pressure will thereby be sensibly relieved. Before starting the lungs should be well emptied and refilled, and if care be taken to rise as soon as the premonitory symptoms of asphyxiation are noticeable, the swimmer will gradually improve his staying powers.

CHAPTER IV

DIVING, PLUNGING, AND FLOATING

DIVING

THE deeds of the diver have been sung from time immemorial. In early ages his occupation was an honoured and practical one, and frequent references to the services rendered by him in time of war are to be found in the classics. Schiller's celebrated poem of 'The Diver' was founded on the traditional feats of a renowned diver named Nicholas, who, from his skill as a swimmer, was surnamed 'The Fish.' Kirchner was credulous enough to believe that this man would often stay in the water five days at a time, subsisting on the fish which he caught; and that his extraordinary power was due to the fact that the spaces between his fingers and toes were webbed. His fame became noised abroad, and King Frederick of Sicily commanded him to give an exhibition of his powers. The King selected the Gulf of Charybdis as the scene of the exploit; and, in order to incite Nicholas to a deed of daring, threw a golden cup into the whirlpool. It is stated that after a considerable time he rose to the surface, holding the cup, but that upon making a second attempt he was drowned.

The daring nature of the feats performed by modern divers are in themselves incentives to ordinary swimmers, and the general ambition of a beginner is to become an expert diver. The whole secret of diving is the possession of plenty of pluck and self-confidence. A man need not be a good swimmer to become an expert diver; there are many, indeed, who can dive well but

swim little. As in every other branch, practice is a *sine quâ non*; but after careful tuition the swimmer will fearlessly dive from a height, enter the water gracefully, and emerge therefrom ready for another dive immediately. Diving is but slightly encouraged in this country, and the exhibitions of it are few and far between. This is all the more surprising when it be remembered that in every race the swimmer has to dive at the start, for with a little knowledge of the art of diving a much better position could often be secured if, at the beginning of the race, he could get well away with a neat skimming plunge. But everything is now subordinated to short-distance speed-racing, and the beautiful diving of the past-masters of the art is almost forgotten. The institution of a graceful diving championship, or the combination of it with the plunging championship, might greatly tend to remedy this neglect; for, without doubt, the expert diver is a being to be envied. In Scotland a graceful diving championship has already been instituted. Some of the heights recorded are almost incredible. Many persons well remember the sensation caused by J. B. Johnson's dive from London Bridge in 1871, when the 'Daily Telegraph' issued its famous panegyric upon what afterwards turned out to be a mere exhibition. Johnson dived to rescue a drowning person, the said 'drowning person' being his brother Peter, who was nearly as good a swimmer as the famous J. B., and a capital stayer under water. But this feat of diving from London Bridge is nothing in comparison with the performances which were accomplished when the era of bridge-jumping in America set in some ten or fifteen years later. Deaths occurred, however, and the pastime of bridge-jumping came to an end. Open-water, and especially coast, swimmers are as a rule better divers than those whose practice is confined to baths. The luxury of a plunge from a good height into deep sea water surpasses that of all other kinds of diving, but it is not exactly owing to this that the coast swimmers are such expert divers. It is rather due to compulsion, that necessitous parent who brings about excellence in so many things. When there is

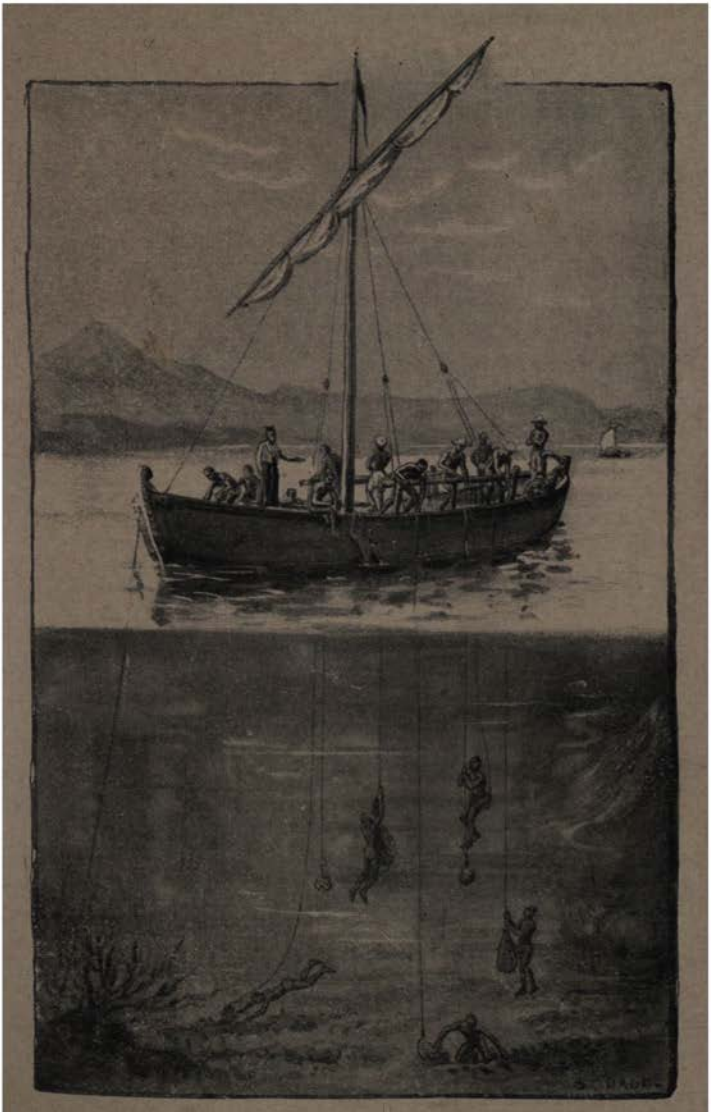
no other way of getting in than from a height, a leap or a dive has to be taken, and the swimmer quickly gains enough confidence to change the leap into a dive. The inhabitants of the islands in the Pacific, whose living is largely gained on the water, are fearless divers as well as swimmers. From an early age they are brought up to the occupation of their forefathers, and work in the surf steels them against fear of any kind. In the 'Voyage of the "Sunbeam,"' Lady Brassey thus describes some performances which she witnessed in Hawaii:

Here we found a large party assembled, watching half the population of Hilo disporting themselves in, upon, and beneath the water. They climbed the almost perpendicular rocks on the opposite side of the stream, took headers, and footers, and siders from any height under five-and-twenty feet, dived, swam in every conceivable attitude, and without any apparent exertion, deep under the water, or upon its surface. But all this was only a preparation for the special sight we had come to see. Two natives were to jump from a precipice, 100 feet high, into the river below, clearing on their way a rock which projected some twenty feet from the face of the cliff, at about the same distance from the summit. The two men, tall, strong, and sinewy, suddenly appeared against the sky-line, far above our heads, their long hair bound back by a wreath of leaves and flowers, while another garland encircled their waists. Having measured their distance with an eagle's glance, they disappeared from our sight, in order to take a run and acquire the necessary impetus. Every breath was held for a moment, till one of the men reappeared, took a bound from the edge of the rock, turned over in mid-air, and disappeared feet foremost into the pool beneath, to emerge almost immediately, and to climb the sunny bank as quietly as if he had done nothing very wonderful. His companion followed, and then the two clambered up to the twenty-feet projection, to clear which they had to take such a run the first time, and once more plunged into the pool below. The feat was of course an easier one than the first; but still a leap of eighty feet is no light matter. A third native, who joined them in this exploit, gave one quite a turn as he twisted in his downward jump; but he also alighted in the water feet foremost, and bobbed up again directly like a cork. He was quite a young man, and we afterwards heard that he had broken several ribs not more than a year ago, and had been laid up for six months in the hospital.

Many writers on the art of diving say that the best method of entering the water is with closed eyes; but this advice is all nonsense, as no person ever enters the water with eyes open when the actual contact takes place. The eyes close together naturally for an instant with a kind of blink. If the learner concentrate his attention on his eye movements, his dive will probably end in an inglorious plump flat on the surface. The eyes can be opened or closed at will when once under the water, and, despite all statements to the contrary, there is absolutely no difficulty in doing this. Objects can be seen more or less distinctly, according to the density and colour of the water and the distance of the object from the surface.

There are two important difficulties in deep diving which have to be overcome. One is the liability to become deaf through damage to the tympanum from shock when the contact with the water takes place, as well as from pressure when at a depth; and the other is an unpleasant forcing of the water up the nostrils. The former is often avoided by the use of cotton-wool or patent ear-cups, but to our mind any swimmer who suffers from ear troubles should refrain from diving altogether. We admit that the temptation to take a dive when chance permits is great, but the pleasure is but a poor reward for years of annoyance through deafness. The second difficulty is a peculiar one, and it has frequently happened to ourselves that a considerable time after diving water has gushed from the nose in a small stream, this more particularly after diving into salt water. For this cotton-wool is also used, but when ears and nostrils are thus plugged up deep diving is more of a task than a delight. The pearl-divers use bone clips or horn for the nose, as the great depth to which they descend, and the method of descent, render it necessary that the nostrils should be closed.

The deeper a diver descends the greater becomes the pressure of the water, the effort to retain the breath becomes exhausting, and the blood rushes to the head. If deep diving be often indulged in, as in the case of a man diving for gain, a



PEARL DIVERS, CEYLON.

curious disease known as 'Diver's paralysis' is likely to be contracted.

The Indian pearl fisheries are the most important in the world, and the work is all accomplished by natural divers. They are brought up to their dangerous occupation from an early age, and in many cases, especially in that of the Sooloo or Sulio race, spend months on the water, with their wives and children, in boats or canoes wandering hither and thither fishing. The Sooloo coast natives are termed 'tan Bajans,' toilers of the sea, or 'sea gipsies,' and are expert divers as well as clever shark-fishers. It is their almost invariable practice to dive head first, and some of them are said to attain great depths. Their average time below the surface is from a minute to eighty seconds, and the depths to which they descend are almost incredible. One diver, in the presence of the officers of H.M.S. 'Champion,' went down fifteen and a half fathoms (ninety-three feet), but failed in the attempt to dive nineteen fathoms, although he had previously been credited with performances nearly as good. Although the loss of life from sharks is not so great as might be expected, these terrible foes are greatly dreaded, and the presence of one in the neighbourhood puts an end to the fishing for that day at least. In the various Government fisheries the pretence that a shark is about is often made an excuse for ceasing work. At Ceylon 'shark charmers' are paid by the Government to go out with the boats, and it would be almost impossible to get a diver to descend unless the 'pittal barras' were present. At this fishery a large fleet of boats is maintained, and it is not uncommon for nearly 200 fishing craft to go out. Before the start there is a great ceremony, and whilst the boats are away the sharks are supposed to be exorcised by the prayers of those on shore, in addition to the special work which falls to the lot of the 'pittal barras' on each boat. In addition to this individual, whose occupation must be a particularly pleasant one, as he apparently does not risk his person, the boats are manned by about twenty men, half of whom are divers, with a pilot or

'adapanaar.' The divers are usually divided into two parties, one party going down whilst the other is resting. Granite stones, pyramidal in shape, are carried in each boat. They weigh about a quarter of a hundredweight, and are used to accelerate the descent of the divers. A rope is fastened to each stone, and the diver, taking a bag of network, to which another rope is secured, in one hand or round the neck, clutches the rope, holding the stone with his foot or with the disengaged hand, and rapidly descends. It is quite common for them to go down simply holding the rope with their toes, so as to keep the nostrils shut by pinching them with the fingers, and it is said that the natives are marvellously expert in working with their toes. As soon as they reach the bottom they throw themselves from the stone, which is at once drawn up to the boat, and quickly collect as many oysters as possible. When exhausted they pull the line connected with the net so that it may be drawn to the surface, and then rise by their own buoyancy.

The divers on the banks at Tulicorin and Trichendoor, which are distant some seven miles from land, cross themselves before going into the water. Their average stay under is about forty seconds. The banks are at a depth of from five to eight fathoms, and for centuries have been fished by members of a caste known as the Parawas.

At the West Australian fisheries the divers enter the water feet first, but quickly turn and swim down. Their power of endurance is said to be very great, and their sight wonderful. They fetch up the oysters in their hands, and, as may be easily imagined, often dive without success. The bringing up of twenty-five shells would be looked upon as a good day's work. As a rule the term of service is for six months.

Some interesting and authentic particulars of the Indian fisheries are given in a work entitled 'All about Gold, Gems, and Pearls,' compiled from a variety of available authorities, by A. M. and J. Ferguson, and published at Colombo in 1888. The following is from a special report made by one of the

authors, Mr. A. M. Ferguson, C.M.G., to the 'Ceylon Observer' in April 1887 :

We started in the 'Serendib' from Colombo about five on Friday afternoon, and while we were waiting, some children on board had an opportunity of seeing the diving performances of four demon-like very black boys who came to the steamer's side on a catamaran. Two of the boys were so long under water before one of them triumphantly brought up a 12½ cent. piece, that I should like to know the depth they go down to, and what the difference of temperature between the surface and lower waters may be. The pearl-divers find it to be so cold at six to eight fathoms (36 to 48 feet), the depth at which the oysters are generally found to exist, that they (the divers) are glad to warm themselves in the sun for a while after coming up from the performance of the task. In my telegrams I have mentioned the cases of two divers whom Mr. Twynam saw die from remaining too long under water, and I have suggested as the cause the non-aëration of the blood, or what has lately been noticed as a cause of drowning, the sudden collapse or paralysis of certain muscles and nerves. The so-called 'Arab diver,' who was timed by us to do eighty-three seconds, differed from others in putting a compressor on his nose, and he was noticed to open his mouth widely, and inhale air in large volumes before going down with his stone and basket. He brought up, or rather he collected in the rimmed net-bag which he had round his neck until he filled it, and which, like the stone, was hauled up separately, forty-two oysters, which was considered a very good haul.

All the divers, when they come up, seem glad to inhale a good gulp of air ; but they do not, or only very rarely and temporarily, show signs of distress. Of the two fatal cases noticed by Mr. Twynam, one was a novice, who no doubt miscalculated what he could bear, from want of experience. The other was a practised diver, but he may have had organic disease. Captain Donnan, s.s. 'Active,' Inspector of Pearl Banks, states that he has never known the divers take anything to help them except snuff! Mr. Twynam once induced a diver to go to the bottom in fifteen fathoms (90 feet, twice the average depth on the pearl bank), but he was so alarmed at the prolonged period from the man's diving to his reappearance, that he has not repeated, and never will repeat, the experiment.

On the diver touching ground with the stone, he at once detaches himself from it, which the force of hauling coolies on each fishing

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boat proceed to pull up. Others haul up the basket when the diver casts it off, and gives the signal of a jerk to the rope. The diver himself has only to give play to his buoyancy to rise, but he is careful to avoid contact with the boat, and will often dash off horizontally outwards in coming to the surface, which he does almost simultaneously with the bag of oysters he has gathered. While he holds on to the side of the boat, the contents are emptied into a large ola basket.

I had the Arab diver with the nose-nipper alongside this morning, and told him to let me see how long he could remain under water, and I carefully timed him; one minute and forty-nine seconds, which is the longest dive on record on these banks or beds. The other Arab, with air-pump and dress, only worked one day with it, when he only sent up 1,500 oysters, and now, without the dress, he is sending up from 2,500 to 3,000 oysters per day; so that the helmet dress and air-pump are not calculated to succeed at pearl-diving. It will be observed that the so-called 'Arab' diver, really a Hindu from the Bombay Presidency, remained under water for a period extending to 109 seconds, or within eleven seconds of two minutes. What that means, only those know who have watched for the re-appearance of a human being who has remained half that time under water. It really seems 'an age' to those who 'watch and wait.' Not only is one and a half minute the longest dive on record in the annals of the Ceylon banks, but I suspect that if sceptical criticism were brought to bear on the stories which allege subaqueous existence by divers for periods of six minutes, the latest feat would be found to take rank amongst the most remarkable in the annals of diving, where the diver has not been artificially supported with air.

No doubt the organs of the human body are capable of being educated by continued practice to endurance of abnormal conditions, and of adaptation to such conditions; to those of extreme heat, for instance, if gradually applied. I could, therefore, understand a man who commenced a diver's life 'sound in wind and limb' obtaining gradually the power of remaining under and repressing inspiration and respiration for two minutes, or at the very utmost two and a half. But those who know that the blood is the life, and that it must as it circulates be aërated, or lungs and heart will cease to act, will be slow to believe in staying power under water of three minutes, far less six.

If such dives have ever been really made, *the record being*

accurately kept, the conclusion must be that in such cases the respiratory organs were in an abnormal condition, or that some means of obtaining fresh air were adopted. It is not obvious how the use of a nose-compressor made of horn could have aided the man who made the dive. I have Captain Donnan's authority to say that the period under water now observed by him is the longest on record in the annals of the Ceylon pearl fishery. Captain James Stewart, so long the Inspector of the Pearl Banks, and who collected much information regarding them, never knew a diver to remain at the bottom longer than eighty-seven seconds, or to attain a greater depth than thirteen fathoms; while on ordinary occasions they seldom exceeded fifty-five seconds in nine fathoms of water.

Six minutes is the period mentioned in the 'Encyclopædia Britannica,' latest edition; but, as no authority is given, one must remain sceptical.

In the same article it is stated that, as the result of their trying vocation, the divers are short-lived. Here, also, I prefer the testimony of such largely experienced and careful observers as Mr. Twynam and Captain Donnan. The men generally make good earnings, live well, being nearly all meat-eaters, look well, and have as good chance of prolonged life as those who follow less hazardous occupations. One reason, no doubt, is that instead of any attempt to remain under water for prolonged periods, their average stay below is somewhat under than over one minute. With prolonged intervals to recover breath, to rest and sun themselves by the sides of the boats (working as they do by relays), their labour hours, as far as diving is concerned, extend only to the seven or six and a half hours from daylight to 1 P.M.

In confirmation of this the following, from the 'British North Borneo Herald,' will be read with interest:

The chief locality of the Ceylon pearl fishery is a bank about twenty miles long, about ten miles from shore, opposite to the villages of Condatchy and Arippo on the northern coast. The season of the fishery lasts about three months, commencing at the beginning of February, and is carried on under Government regulations.

The boats employed are open, and vary in size from ten to fifteen tons burden; they put out at night, usually at ten o'clock, on a signal gun being fired from the fort of Arippo, and make for the

Government guard vessel, which is moored on the bank, and serves the double purpose of a guard and a light ship. The divers are under the direction of a manager, who is called the Adapanaar, and they are chiefly Moors, and Tamils from India.

For each diver there is provided a diving stone, weighing about thirty pounds, which is fastened to the end of a rope long enough to reach the bottom, and having a loop made for the man's foot; and in addition to this a large network basket, in which to place the pearl oysters as he collects them. These are hung over the sides of the boat; and the diver places his foot in the loop attached to the stone, liberates the coils of rope, and with his net-basket rapidly descends to the bottom.

To each boat there is usually allotted a crew of thirteen men and ten divers, five of whom are descending whilst the others are resting. This work is done very rapidly; for, notwithstanding the stories to the contrary, the best divers cannot remain longer than eighty seconds below, and few are able to exceed sixty. The greatest depth they descend is thirteen fathoms (78 feet).

When the diver gives the signal by pulling the rope, he is quickly hauled up with his net and its contents. Accidents rarely happen, and as the men are very superstitious, their safety is attributed to the incantations of their shark-charmers, performed at the commencement of the fishery. Sir E. Tennent, however, attributed the rarity of accidents from sharks, usually so abundant in tropical seas, to the bustle and to the excitement of the waters during the fishery frightening away the dreaded creatures. These divers are sometimes paid fixed wages; others agree for one-fourth of the produce.

The statements we have quoted are those of trustworthy eye-witnesses, and their observations leave no room for doubt that the marvellous feats of pearl-divers recorded and copied by many writers are purely mythical. So long ago as 1863 the Hon. George Vane, in his Report to the Governor, Sir Henry Ward, said that when regularly at work the divers remain under water from 60 to 70 seconds, and that the greatest stay he had ever timed was 95 seconds. This he believed to be a quite exceptional case.

In one of his Reports, Mr. W. C. Twynam, Government Agent, North Province, whose observations are quoted in the

article by Mr. Ferguson, says that on April 9, 1887, 116 boats went out, with 1,000 divers, most of whom were Mohammedans. This fact alone will be sufficient to give an idea of the vast importance of the fisheries to the natives.

In the year 1825 Lieutenant Hardy, R.N., went out to Mexico to report upon the pearl and coral fisheries, and in order to ascertain correctly the state of the banks he became a diver himself.

If it be difficult to learn to swim [says Lieutenant Hardy], it is infinitely more so to dive. In my first attempt I could only descend about six feet, and was immediately obliged to rise again to the surface; but by degrees I got down to two or three fathoms, at which depth the pressure of the water upon the ears is so great, that I can only compare it to a sharp-pointed iron instrument being violently forced into that organ. My stay under water, therefore, at this depth was extremely short; but, as I had been assured that as soon as the ears should burst—as it is technically called by the divers—there would be no difficulty in descending to any depth, and wishing to become an accomplished diver, I determined to brave the excessive pain till the bursting should, as it were, liberate me from a kind of cord, which limited my range downwards in the same way that the ropes of a balloon confine the progress of that machine upwards. Accordingly, taking a leap from the bows of the boat, full of hope and resolution, with my fingers knit together over my head, the elbows straight, and keeping myself steadily in the inverse order of nature—namely, with my feet perpendicular upwards—the impetus carried me down about four fathoms, when it became necessary to assist the descent by means of the hands and legs. But, alas! who can count on the firmness of his resolution! The change of temperature from hot to cold is most sensibly felt. Every fathom fills the imagination with some new idea of the dangerous folly of penetrating further into the silent dominions of reckless monsters, where the skulls of the dead make perpetual grimaces, and the yawning jaws of sharks and *tentereros*, or the death-embrace of the *manta*, lie in wait for us. These impressions were augmented by the impossibility of the vision penetrating the twilight by which I was surrounded, together with the excruciating pain I felt in my eyes and ears: in short, my mind being assailed by a thousand incomprehensible images, I ceased striking with my hands and legs; I felt myself

receding from the bottom; the delightful thought of once more beholding the blue heavens above me got the better of every other reflection; I voluntarily changed the position of my body, and in the next instant once more found myself on the surface. How did my bosom inflate with the rapid inspirations of my natural atmosphere, and a sensation of indescribable pleasure spread over every part of the body, as though the spirit was rejoicing at its liberation from its watery peril! In fact, it was a new sensation, which I cannot describe. I did not suffer it, however, to be of long duration. Once more I essayed, with a more fixed determination. Again I felt myself gliding through the slippery water, which, from its density, gave one the idea of swimming through a thick jelly; again I experienced the same change of temperature in the water as I descended; and again the agonising sensation in my ears and eyes made me waver. But now reason and resolution urged me on, although every instant the pain increased as I descended, and at the depth of six or seven fathoms I felt a sensation in my ears like that produced by the explosion of a gun; at the same moment I lost all sense of pain, and afterwards reached the bottom with a facility I had thought unattainable. I no sooner found myself at the surface again, than I became sensible of what had happened to my ears, eyes, and mouth; I was literally bleeding from each of these, though wholly unconscious of it.

Sponge-fishing, especially for the finer qualities, is also undertaken by natural divers in different parts of the world, and this system of finding coral was also at one time much practised. It is now falling into desuetude. Ordinary fishing is often conducted in the same manner, and divers even have the temerity to tackle sharks in their own domain with only a small stick, pointed at both ends, as a weapon. This is thrust into the jaws of the monster in such a position that when attempting to seize the diver the jaws close upon the sharp points. The divers then hasten to escape, for a slight lash from a shark's tail is sufficient to break a limb.

For the purposes of pastime the other forms of diving, such as 'headers,' 'skimming plunge,' 'low diving,' 'high diving,' and 'plunging,' &c., are preferable to 'deep diving.'

The best method of learning to dive is to stand on the side

of the bath or on the bank of a river, then stoop down until the body is nearly double, stretch out the arms in front of the head, sink the head between them, and gradually tumble over into the water. The great difficulty is to make the first plunge. Once that is accomplished proficiency will soon come with practice. Most beginners are nervous, and afraid to [illegible] head first. Their trials are often very amusing. They will start for a dive, but change it into a jump; or they will keep their head back and arms up, thus coming down on the water in grand style, with plenty of noise and splash. A very good plan with a beginner who is learning to dive is to get two other swimmers to hold a towel stretched in front of him. This gives him an idea as to the throwing up of the legs, and as he goes over if the legs are not thrown up, the swimmers should raise the towel so as to force the learner to make a clean dive. At his next attempt he will probably get his legs up properly.

LOW DIVE

The low dive is usually taken from a diving base about three feet above the surface. The legs are placed together, and the body kept erect. Then a few short inspirations are taken, the arms swung to the front, and a spring made from the diving base. As the feet leave the board, they are thrown up above the level of the head, the body is straightened, and the head placed between the arms. These are kept at full stretch beyond the head, with the hands palm downward and thumbs touching, so as to act as a cutwater. Immediately the diver enters the water the hands are turned up, and the body at once comes to the surface.

HIGH DIVE

High diving requires great care, especially if the water be shallow, but there must be no hesitancy in the work. The usual high dive is a mere drop at a downward angle, because the throwing up of the legs when at a height imparts additional motion to the body, and may so turn it over as to cause the

diver to take the water with his face towards the diving base, or land on his back. The prettiest high diving is, however, that where the forward spring is used; but this requires some skill. A leap is made into mid air, the body straightened almost to a horizontal level, the arms and head then declined towards the water, and the legs brought up. This action causes the body to shoot towards the water at the proper angle, and a clean and effective dive to be made.

RUNNING HEADERS

A spring diving-board is generally used for running headers. A run of from twenty to thirty feet is made, when the end of the diving-board is neared a jump is taken, and the body shoots up into the air. Then the experience gained in high and low diving is brought into service, the body is straightened and

declined towards the water. When properly done this style of diving is very graceful. It creates no splash, and the body enters the water in beautiful style. When a spring diving-board is not available, the running header should be taken from the bank. After practice, an obstacle—such as a rail or small fence at the take-off—can be cleared with ease. Some amusing games can be carried on when there are a number of expert divers practising running headers.

DIVING FEET FIRST

In diving feet first the body should be kept as erect as possible, the arms at the side, and the head slightly back. The breath should be held when the jump is made, otherwise the water will be forced up the nostrils; or, if necessary, the nostrils can be held with one hand. Care should be taken that the legs are not opened, and that the arms are close in to the body; but as soon as the water is entered the arms and legs should be spread out, so as to minimise the impetus gained from the jump and prevent the feet from striking violently on the bottom. Another way to perform this jump is to raise the arms over the head and lock the fingers together. This form is useful when leaping from a great height, as any deviation of the body from the perpendicular can then be counteracted by a slight movement of the arms.

THE SITTING JUMP

There is nothing graceful in this jump, and the performance of it is likely to cause annoyance to the bystanders, owing to the tremendous splash as the body enters the water.

The swimmer should stand on the diving-board, or some elevated place near the bath, and then leap well out over the water, doubling up the legs to the body, crossing the feet, and holding the front of the calves with the hands, so as to enter the water in a sitting posture.

There is a spice of danger in the jump, if it be taken from

a considerable height, because the rapidity of the descent through the water may end in serious damage to the lower portion of the back, unless the legs and arms be quickly parted after the body is immersed. In deep water this does not much matter, but in baths—which are, as a rule, about five feet deep—very great care should be exercised to prevent the lower portion of the back striking the bottom of the bath.

THE SITTING JUMP

PLUNGING

The definition of a plunge, as adopted by the A.S.A., is as follows: A plunge is a standing dive made head first from a firm take-off, free from spring. The body must be kept motionless, face downward; no progressive action to be imparted to it other than the impetus of the dive. Such plunge must terminate when the competitor raises his face above the surface of the water. The distance traversed shall be measured along a straight line at right angles to the diving base, to a line parallel with the diving base, over the farthest point reached by any portion of the competitor's body while fulfilling the above conditions.

It is unfortunate for the first-class exponents of plunging that the tediousness of the competitions, from a spectacular point

of view, has tended in a great measure largely to decrease the interest which the institution of a plunging championship was expected to foster. Some measures were taken by the Otter Club to remedy this, and a system of plunging races was inaugurated. In these the competitors started by word of command, in heats, as in ordinary races; but the idea was not followed up successfully. Its failure may possibly have been due to the fact that all the men were started together, instead of a new time-handicap system being formed, or the men started singly and their times were recorded, the fastest being declared the winners.

Before water-polo matches began to be included in almost every programme, plunging was much more largely fostered; but now, at an ordinary gala, plunging competitions are as a general rule vetoed, because they take up much time and do not produce excitement and interest among the spectators, as do those contests in which a number of competitors are engaged at the same time. They rank in the estimation of the public at about the same value as do the hammer-throwing contests among followers of athletics. In all plunging matches one person enters the water at a time, floats on till his breath is exhausted and he is compelled to raise his face to the surface, whereupon the plunge is deemed to have ended. He moves after the first thirty or forty feet at a pace somewhat akin to that of a snail, and to the uninitiated the contests appear absolute waste of time.

But although plunging competitions and championship contests are so little in favour, it by no means follows that this branch of the art of swimming should not be practised. There are very few first-class plungers, but if clubs would more generally encourage the art by including it in their ordinary fixtures, a vast improvement would be brought about in this respect. One of the greatest enthusiasts is Mr. H. Hewitt Griffin, and from the following table which he compiled for handicapping purposes in the season of 1892 a general idea of the present position of plunging will be gleaned. The 106

performances are those of competitors noted by Mr. Griffin, and the classes were framed from Mr. G. A. Blake's record of 75 ft. 7 in. made at Lambeth Baths on October 10, 1888.

ANALYSIS

Under 30 ft.	30–35 ft.	35–40 ft.	40–45 ft.	45–50 ft.	50–55 ft.	55–60 ft.	60–70 ft.	Over 70 ft.
13	34	21	20	5	9	1	2	1

Champion Class, over 60 ft.	3
First Class, over 50 ft., under 60 ft.	10
Second Class, over 40 ft., under 50 ft.	25
Third Class, over 30 ft., under 40 ft.	55
Fourth Class, under 30 ft.	13
	106

It is not very difficult for a man who at first starting is a comparatively poor plunger, or, to use Mr. Griffin's table, is in the 'fourth class,' to raise himself by a few weeks' constant practice to the second class. After reaching fifty feet, improvement, except in phenomenal cases, is slow; whereas a man in the fourth class may improve several feet each day. In the higher grade improvement comes only by inches, and at times the plunger is apt to be disappointed at his inability to equal his previous best. No notice of this should be taken, but practice continued, as very often in the next attempt the performance is better than expected.

To this cause is due the fact that in championship and level contests three plunges are allowed; for it is seldom that a competitor at the first plunge is able to equal his record. This is a curious fact worth remembering.

Many of the failures are attributable to the varying conditions as to the take-off. At one entertainment the competitors may be asked to plunge from a point four or five inches above the surface; at another, some three feet from the water; and it therefore frequently happens, especially in a strange bath, that a plunger is not really able to judge the angle at which he

should enter the water to enable him to gain the greatest possible impetus from his dive.

Another reason is that, although the body should be fully inflated with pure air before entering the water, that process is not often completed, and the buoyancy of the body is lessened, a bad plunge being the consequence. Again, the spring may be well taken and the lungs properly inflated, yet a plunger may enter the water with one of his legs lower than the other, and this will cause him to deviate from the straight line in which the plunge should be made, the leg which is lowest acting as a rudder and sending the body round to the side of the bath nearest the lowered leg.

The foregoing are three special points of which practised plungers at once become cognisant, and they are particularly careful to remember them in their second plunge. There are, of course, other points in plunging which have to be picked up, the most important among them being the management of the breath; but those just noted are the little details which, forgotten for the moment, but quickly remembered when a miserable plunge is made, so often cause an improvement in subsequent plunges by the same man in the same competition.

When in the water a good plunger can at once tell whether he is doing well or not. He feels pressure against a given point in the body—perhaps the shoulder, or the arm, if the latter be not fully extended—or in rising to the surface the body assumes too perpendicular a position, and, slowing down directly after he reaches the surface, is not carried forward by the receding water, which although perhaps not noticed by onlookers, or even the majority of plungers, has a marvellous effect on the floating body. If those who take an interest in the art will watch a slow plunger, they will observe that immediately after he rises to the surface, the water, which is constantly in motion owing to his own and previous plunges, begins to splash slightly against the body, and this resistance can only be lessened by the plunger first learning to make a clean and well-judged dive.

It is absolutely useless for a man to stand on the side of a bath and indulge in strained respiration, as so many do, if at the take-off he does not accurately judge the angle and the possible resistance of the water. When practising, or in competition, a towel should first of all be laid down on the spot from which the 'take-off' is to be accomplished, a portion of this towel being allowed to overhang the edge of the bath so as to prevent the plunger from slipping.

PREPARING TO PLUNGE

The plunger should stand erect on this starting base with the toes slightly overlapping the edge of the bath and the ball of the foot resting firmly upon the diving base. When prepared, the whole of the attention should be devoted to the inflation of the lungs, and to effect this he should be perfectly calm and unmindful of the spectators. The knees should be kept together, and the body poised upon the ball of the foot. Then the arms should be swung slowly backward and forward and a few short inspirations taken, the heels being raised from the ground at each forward swing of the arms. The inhalations should be short and the expirations long.

As soon as the lungs are well cleared a spring forward is made and a deep inspiration taken. As the feet leave the diving base the hands are thrown above the head in line with

the body, which in the spring forward should be directed so as to enter the water some ten or twelve feet from the starting-point. The actual angle to be observed can only be arrived at by continual practice, but at no time should the body be more than two feet or two feet six inches below the surface of the water. When the body has once entered the water the palms of the hands should be flat, the fingers kept perfectly straight, and thumbs locked. The feet should be turned well back, with the soles as nearly as possible facing upward. At the same

THE PLUNGE

time the body must be kept rigid in as straight a line as possible, and perfectly motionless.

If these directions be observed, the body will move from twenty-five to thirty feet under the water, then gradually rise to the surface and float onwards in a straight line; the plunge terminating when the swimmer finds the air in the lungs exhausted and is thereby compelled to raise the face.

When the body is rising to the surface after the dive, care should be taken that the head and arms do not come too far out, but remain well on the surface; otherwise the impetus

gained by the dive will be greatly lessened, and the distance of the plunge curtailed. The impetus of the dive tends to send the body well up after the immersion, but if the direction be not carefully guided by the head and arms, the swimmer simply rises, and, although his face be not exposed, sinks again on to the water instead of gliding slowly onwards.

To be a good plunger it is necessary first of all to be a clean diver, and well able to judge the angle at which to take the water when the height of the diving base from the surface varies, no matter how slightly, from that usually adopted for

FLOATING AFTER PLUNGING

practice. If the legs are liable to sink, a slight drop of the head and bend of the knee will usually counterbalance this. As soon as the feet begin to sink, the onward movement almost if not entirely ceases, as they at once offer a dead resistance to the water, and it is at this point that previous practice in floating becomes exceedingly valuable.

In order to 'hang on,' or otherwise expend to the greatest advantage the progressive power which has been gained from the dive, it is essentially important that the management of the breath should be made the subject of careful study, as it is the principal difficulty with which a plunger has to contend.

There is, of course, a great strain on the respiratory organs when a long plunge is being taken, and it will therefore be evident that immediately before the dive the lungs should be fully inflated with pure air, so as to allow the plunger to enter the water under conditions which will enable him to make the longest possible stay, with his mouth and nostrils below the surface, without undue strain.

In competitions, every plunger should avoid doing anything which is likely to upset the chances of his opponents. It often happens that swimmers, unwittingly, do a great deal towards lessening the distance of the plunge made by those who follow after, as they swim swiftly back to the starting-point, or else to the side, after completing their plunge, and thereby create a current sufficient materially to affect the direction and speed of the plunge made by the next man. It is remarkable how very little disturbance of the water is needed to cause the floating body to veer round to the side of the bath instead of going straight ahead, and a good plan of obviating this is to have a black mark all along the bottom of the bath, which the plunger can see. In the absence of a permanent mark, a rope along the centre of the bath will be found useful for practice, and the plunger will gradually learn how to keep the body straight.

An experienced man can at once tell when his body is beginning to deviate from a straight line with the diving base, and by an imperceptible alteration of the direction, or curve of the body, can counteract the error. When the water has been disturbed by a previous plunger swimming to the side, the point at which this man began to swim is the point at which there exists the greatest liability to turn round, and many plungers would rather go in after a whole shoal of swimmers have been disporting themselves than follow a man who has swum rapidly in to the side.

In order to effect a good plunge, many of those who take part in competitions 'hang on' an inordinate time, until the respiratory centre becomes affected, and the head painful.

Two or three instances have come under our own personal observation of plungers sinking, face downwards, in a state of insensibility; but such cases are rare, as the face, being close to the surface, can be quickly raised, when the feeling of strain becomes noticeable. It will, however, be recognised that in deep water the danger is one that should not be overlooked, and when such competitions are in progress both the plungers and the officials should be on the alert for possible accidents.

There is another system of plunging which is but little

PLUNGING FEET FOREMOST

practised now—that of entering the water feet first. The best-known exponent of this method was Horace Davenport, President of the Amateur Swimming Association, and in his day a swimming and plunging champion who honourably and successfully held his own for a number of years.

The swimmer stands on the side of the bath, inflates his lungs, and then leaps outward as far as he can, at the same time throwing his arms out beyond the head to the same position as in the ordinary plunge. The body must be forced

well back, and then, with the legs, straightened and stiffened. The body must enter the water at a similar angle to the ordinary plunge. In practising this method great care must be exercised by the novice in the first few attempts, so as to avoid the danger of striking the side of the bath or the diving-board with the head, as in the endeavour to get into the proper position one is apt to misjudge the distance which it is necessary to leap.

If the plunger desires to rise to the surface quickly, the arms should be slightly dropped back, and the legs raised from the hips. In this method an unpleasant sensation is sometimes experienced by the pressure of the water in the nasal passages, and as this may cause the plunger to discontinue his efforts, the foregoing hint may be useful.

FLOATING

Motionless floating on the surface of the water, and more especially in the open sea, on a warm summer day is a luxury in itself. Simple as the feat may seem, it is not easily accomplished, and the person able to float is possessed of a power which many good swimmers envy. It does not follow because the speed rate is good that a swimmer can easily float without much practice, or, on the other hand, that a first-class exponent of the art of floating must needs be a good swimmer. It is possible to learn to float without first being able to swim, but such an ability can only be acquired by persons who are not subject to nervousness. Only those who are able to float can in any way adequately appreciate the delight which a novice experiences when after—very often—long practice, attended by repeated failures, he realises the fact that he is actually floating.

The tedious practice required to become perfect in the art undoubtedly prevents many men from acquiring that power which, when once gained, enables the swimmer easily to perform many feats which otherwise seem difficult or, in fact, impossible, and which also largely increases that all-important feeling in swimming exercises—absolute self-confidence.

Apart from its obvious usefulness, floating is so graceful a pastime that it is the ambition of most swimmers to become experts; but, unlike swimming, it cannot be learnt by any given methods, as the relative buoyancy of each individual body varies. It is therefore compulsory first of all to discover the exact position in which the body must be placed in order to float properly, and then so to regulate the breathing as to enable the swimmer to keep the mouth above water. Theoretically, it is possible for every person to float. This may be correct in so far as salt water is concerned, but in fresh water cases frequently occur in which the chest capacity is not sufficient to counteract the specific gravity of the body, and although the body might float to all intents and purposes on the surface, the head would have to be so far craned back as to keep the mouth and nostrils under water.

To overcome this is the secret which governs the whole art, and how it may be overcome, in the majority of instances, it is our province to demonstrate. No very great skill or exertion is required to obtain perfection. All that is necessary is practice, continued practice, even if failure seem always to be the result. New positions of the limbs must be tried, and if the succeeding movement of the body be remembered the swimmer will quickly grasp the fundamental principle that floating is merely the balancing of the body on the surface so that neither the arms nor the legs sink downwards. If the whole body slowly settle towards the bottom, then the respiratory organs are at fault, or else the limbs have not been extended at the same level as, or lower level than, the rest of the body. If the legs sink, then the arms have not been extended sufficiently or kept widely enough apart, the head has not been sunk low enough, or the chest properly expanded. It is surprising how little is often required to just balance the body on the surface. The mere deflection of one hand may prevent sinking; and as soon as this fact is fully grasped floating comes as naturally as ordinary swimming.

Women, as a rule, learn to float more quickly than men,

because, as already remarked, their bones are lighter, and their adipose tissue greater than that of males.

It is erroneous to suppose that if a person be thin and possessed of but little adipose matter floating is rendered impossible. A stout person is possessed of greater advantages at the outset, and is more likely to learn rapidly; but the thin person need not on that account despair, for one of the best exponents ever known—Buckingham—was a remarkably thin man.

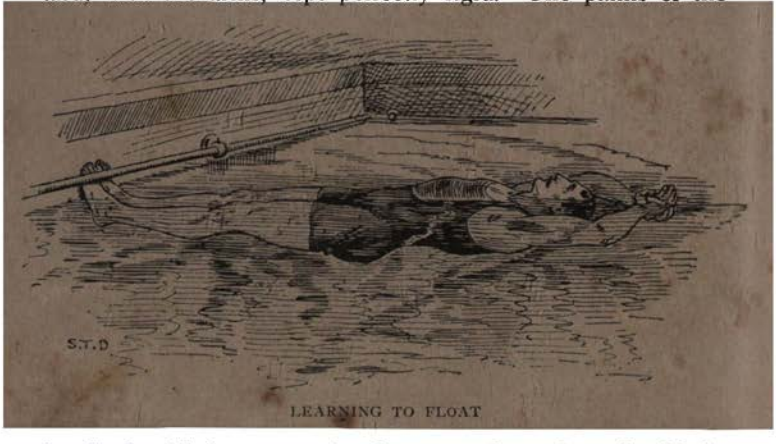
To a swimmer who really loves the art as a pastime, there is nothing so enjoyable as being able to float in open sea water. When the breakers are running high the body is at one moment poised on the top of a wave, while the eyes rapidly scan the valley of water beneath and the incoming wave beyond; the next moment the body is sunk in the valley with a high mountain on either side, and the blue sky above.

The essential in floating is plenty of self-confidence. If a man be possessed of this, it will not take him very long to master the art. It is the nervous and impatient who experience so much difficulty. Non-success even after continued practice should not be allowed to act as a deterrent, but all the precept in Christendom is often unavailable with the swimmer 'who could float if his legs would not sink.'

To learn to float in fresh water the deep end of the bath is preferable, because the deeper the water is the easier it is to float, on account of the greater density and accordingly increased buoyancy. In salt water very little practice is required, a few attempts at one dip being often sufficient for the swimmer, who in fresh water has perhaps tried off and on for months.

When beginning the attempt to learn, the mouth should be kept closed, as, when the body comes to a horizontal position on the surface, the water will in all probability ripple over the face before the arms are placed accurately beyond the head, and, if the mouth be open, the swimmer forgets all about the need for balancing himself, gasps at the inrush of the water,

lets his legs sink, and then has to begin again. One of the best methods is to stand on the bottom of the bath, stretch the arms out perpendicularly over the head, and gradually incline the body backward until the shoulders are under water, all this time keeping the legs rigid and the body and arms as far as possible in the same straight line with the legs. The lungs should then be well filled, and a slight push off from the bottom taken. Every movement must be made slowly and carefully; there must be no jerking, or failure will inevitably result. As the legs rise to the surface they should be extended, and, with the arms, kept perfectly rigid. The palms of the

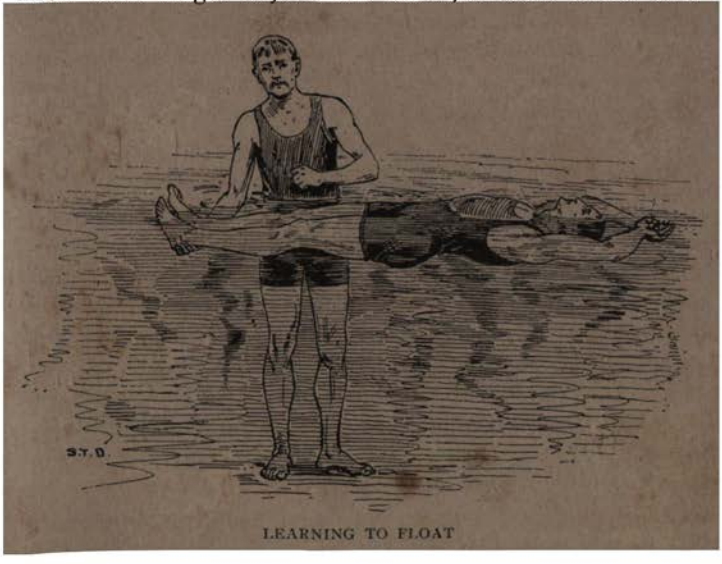


LEARNING TO FLOAT

hands should face upward; the arms themselves should be widened apart if necessary, so as to cover a greater surface of the water, the head should be kept well back. If the body sink for a moment, the limbs should still be kept rigid, and the breath held. The mouth and nose, toes and chest, will then rise above the surface, and the swimmer will realise that he is floating. The body will sink slightly at each expiration, but will rise at each inspiration.

The supreme difficulty in floating is to overcome the perverse tendency of the legs to sink. The turning back of the palms or the widening of the arms may be sufficient to

stop this ; but if after frequent trials it is found still to be a source of failure, then some other system must be attempted. One of these is to place the feet behind the rail of the bath, which is usually fixed a few inches above the surface, or else on the steps which lead into the water, and then lie flat on the back. This will keep the feet on the surface, so that further experiments in balancing may be made. The chest should be fully inflated, and the head and arms so placed as to throw more weight beyond the breast, in order to act as a



LEARNING TO FLOAT

resisting force to the downward pressure of the legs. The spine should be bent slightly backwards, the legs and arms stiffened, and the head thrown well back, as this will elevate the mouth and chin. As soon as the body appears to be floating, the feet should be raised from the steps or worked out from behind the rail, but not in such a manner as to cause them to drop on to the water ; for if this be done, a certain slight downward action will be imparted to them, which it will be hard to counteract until the true balance be found.

In the absence of any suitable rail or steps, the assistance of a friend should be secured, and at the outset he should be asked to place his hand under the small of the back. If the body floats, and the feet only sink, then the heels only should be supported lightly near the surface, while the learner endeavours to find the exact position in which he can balance his body in the water.

It is useless to try and become an expert without careful attention to detail. A few short trials are valueless; the practices should be extended over a long period, and the art acquired gently and gradually. The system adopted by most beginners is to swim on the back, and then, without thought or method, attempt at once to come into position. They have seen some other person floating, and imagine that they are compelled to place their limbs in relatively the same position, while they overlook, or do not fully understand, the mechanical principles which govern floating. No greater fallacy was ever promulgated than the theory that if a person merely lie out flat on the surface of the water with legs and arms extended and rigid he is bound to float, but floating is possible for almost every sensible person if it be carefully practised. The ability is important in attempts to save life, but, nevertheless, very little instruction in it seems to be given by swimming clubs. Speed, not grace, is the aim of most swimmers; the portions of their art which commend it to the outside public are forgotten in the hunt for prizes, and then neglected in after life. It is easy for boys to learn to float, and as the acquirement so vastly increases the confidence of a swimmer when in the water, it is marvellous that it is so much neglected. Swimming is not always a pastime; there are occasions when, beset with danger and difficulty, it is the actual means of saving life, and it is then that the value of self-confidence in the water is fully appreciated. Every person who can swim should certainly learn to float.

CHAPTER V

SCIENTIFIC SWIMMING

A SWIMMER cannot lay claim to be an expert unless he can float, and as soon as that can be done well, scientific and trick swimming becomes fascinating to him. Many of the feats which to an ordinary speed swimmer seem wonderfully difficult are really very easily performed; but in this branch of the art, more than in any other, practice of a careful and painstaking character is compulsory. A number of the tricks can only be accomplished after very steady trials, and any swimmer who attempts them in public before attaining perfection risks the chance of making his exhibition ludicrous and absurd.

There are very few amateur swimmers who are sufficiently expert to give exhibitions, but many professionals are capable of affording great entertainment and interest to their patrons. It is not necessary for an amateur to learn scientific swimming, but the ability to do almost anything in the water brings with it an increased pleasure in bathing and swimming, not attained by merely being able to cover a certain distance in a given time. Very probably the lack of good teachers, and the slight interest taken in the higher development of the art by swimming clubs, have prevented amateurs from becoming, as a body, scientific swimmers; but there is no reason why they should not include in their club work exercise in that branch of the sport which forms the greatest attraction to spectators, and educates their members to a knowledge of the power

which by practice can be acquired over the water. With that view in mind we have endeavoured so to describe the methods usually adopted to perform the tricks in as simple a manner as possible.

TREADING WATER

It is generally imagined that treading water is a very easy method of progression, possibly because the action by which it is accomplished appears to be almost the same as that of walking. There are some preposterous stories as to the ability of the soldiers of Frederick the Great to cross rivers in this fashion with their arms and ammunition carried above the head, to prevent damage by water; and these legends are actually credited by many persons whose knowledge of swimming is limited. In order to tread water properly, swimming must first of all be learnt, and to do it with ease the arms must be used as well as the legs; otherwise the legs have to be moved so rapidly that exhaustion soon follows, for it is by no means a pleasure or a rest to keep the body on the surface by the action of the feet only.

TREADING WATER

There are three well-known methods of treading water, and since water-polo has come so much into vogue they have been far more practised, perhaps involuntarily, than was previously the case.

In the first method the hands are placed on the hips, the head is leant well back, the chest inflated, and the body brought to a perpendicular position. The legs are then moved alternately, the water being struck by the sole of the foot, and the legs kicked outwards from the knees to the front and then drawn backwards. This action causes the body to move forward.

The head is kept in its normal position in the second method, but the arms are folded across the chest. The legs are drawn alternately backwards, and the water struck by the front of the foot. When quick strokes are taken the body glides backwards.

The third method is perhaps the most common. The arms are extended at right angles to the body, with the palms downwards, and the head remains in a normal position, with the chin just above the water. As regards the leg action, some swimmers use the downward or closing kick of the ordinary breast-stroke, while others adopt one of the other two methods just described ; but when both legs are used simultaneously the body remains almost in the same spot, although it rises considerably out of the water at each kick.

REVOLVING ON THE SURFACE

As soon as a swimmer has learnt to float with ease, and fully understands the principles which regulate all expert floating, the feat known as revolving on the surface may be attempted. It is useless trying to achieve this object beforehand, because, like many other tricks, it entirely depends on the learner's capacity for balancing himself. Not a single swimming action is required.

In beginning this feat the body is first of all brought into the position of horizontal floating, the legs are closed, and the

hands extended beyond the head, the thumbs being locked together. When the body is quite stationary and the lungs are inflated, the revolutions can be begun. As in all other floating feats, this fact cannot be too strongly impressed upon the novice—every movement must be gentle and gradual. The face is slowly turned to the right, and the muscular force of the right side of the body so exerted as to cause the body to topple over on to the face; and immediately this is effected the direction of force is changed to the left side of the body, which immediately begins to turn round on to the face again. Needless to say, this trick requires to be done very neatly to be appreciated, and many patient trials must be made before perfection can be expected.

After a time from ten to twelve revolutions can be made all regularly and in quick succession without any pause between them. The first turn over sets the body in motion, and once this can be done properly the after movement is comparatively easy if the swing of the shoulder be made rhythmic. No swimmer should attempt to perform this trick before spectators unless he can accomplish it gracefully; otherwise it looks as if a gigantic struggle to keep on the surface of the water were taking place.

SWIMMING LIKE A DOG

This is a very simple trick, and one which most swimmers can perform with ease. The hands and legs are moved alternately, in a distinctly different manner from the movements of the breast-stroke. The legs are kicked out straight to the rear, the sole of each foot striking the water separately, instead of the legs working together, as in the circular sweep taken when swimming on the breast. The hands are placed in front of the body, palms downwards, successively pressed down under the body, and then drawn up again into position instead of being brought to the side. The action closely resembles the paddling of a dog.

SWIMMING LIKE A DOG

SCULLING

Sculling is a very easy method of swimming on the back, as it only requires the expenditure of slight power to maintain the body on the surface and at the same time propel it through the water.

The swimmer turns on the back with the legs closed and straight, the head slightly bent forward, and the arms flexed and laid near the body. The hands, palms downward, should be in line with the thighs, the fingers together and slightly pointing towards the surface.

Then the hands should be moved from the wrists in semi-circles from right to left, extra power being imparted by the muscular action of the forearm. As the hands return towards the body they should be feathered through the water, and the body will then move head foremost in a very graceful fashion.

To move in the same way feet first, the hands should be turned towards the bottom, and made to describe semicircles from the wrists as in the backward movement.

SOMERSAULTS

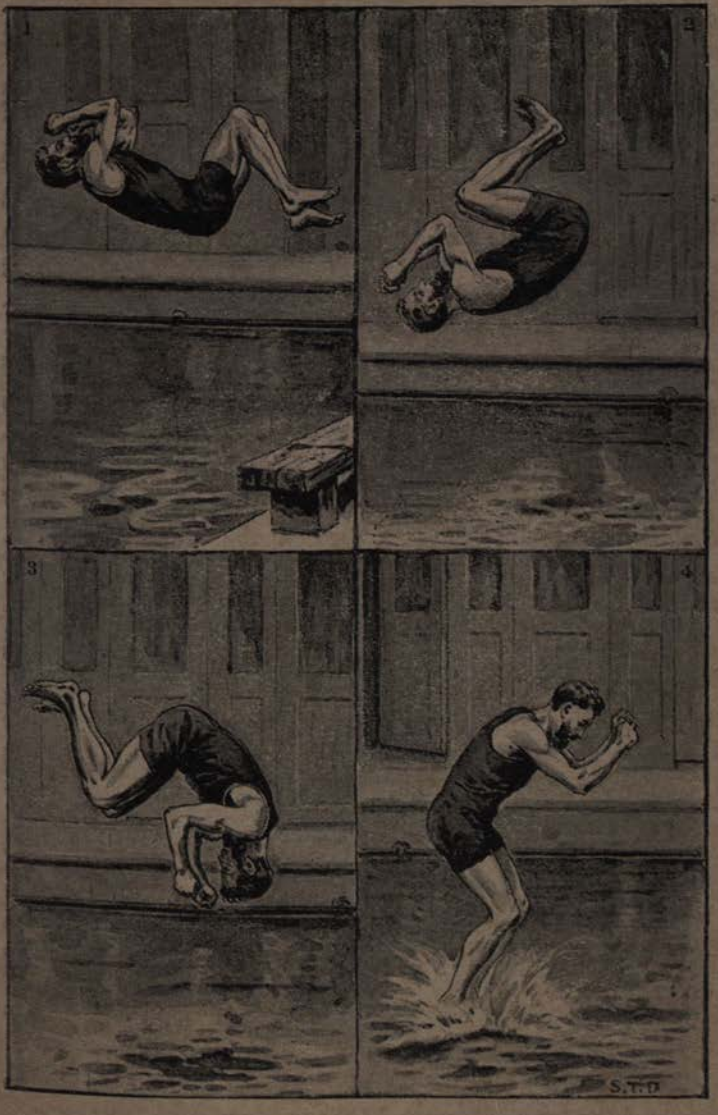
The ordinary somersault, either backwards or forwards, as the case may be, is simply the turning over of the body when in the water.

When performing the back somersault, the head is bent as far back as possible, the legs are drawn well up, and the arms brought in a straight line with the shoulders at right angles to the body. At the same time the body is turned on to the back, and a stroke taken with the hands and arms only. This stroke is effected in the following manner: The arms are forced towards the back, and brought back with a semicircular stroke, the palms being upward at the finish. The main portion of the work is done with the palms, and as the body is doubled up this action causes it to turn a complete

SINGLE SOMERSAULT.

circle, the head going under first. The same degree of force must be employed with both hands, or else the body, instead of going over regularly, will move sideways towards the hand which is exerting the least power.

In forward somersaulting the head is pressed down upon the chest instead of being leant back, but the legs are doubled up in the same fashion, and the arms placed at right angles to the body, with the palms downwards. As soon as the body is in position, a stroke similar to that used in 'backward' somersaulting is made with the arms, but with this exception: it is started by a movement to the front and not to the back, as in



THE BACKWARD SOMERSAULT

the other style. This will cause the body to turn over in its own space, the arms forming the axle.

In practice each turn either way may be so timed as to allow the swimmer to breathe regularly ; but when the motions are to be performed rapidly, a good supply of fresh air should be taken in before beginning, as there is then no time for proper respiration. If a fresh inhalation is absolutely required, then, as the body turns over and the face reaches the surface, the hands should be slightly depressed. This will raise the body to a higher level than the ordinary circular sweep, and the mouth will be cleared from the water for the brief interval that is necessary.

To the uninitiated somersaulting appears difficult, but it is surprising how easily it can be accomplished. Any ordinary swimmer is well able to accomplish five or six turns. Experts have been known to make as many as thirty successive somersaults. Single somersaults can also be made from a diving-board, the body turning when in mid-air.

DOUBLE SOMERSAULTS

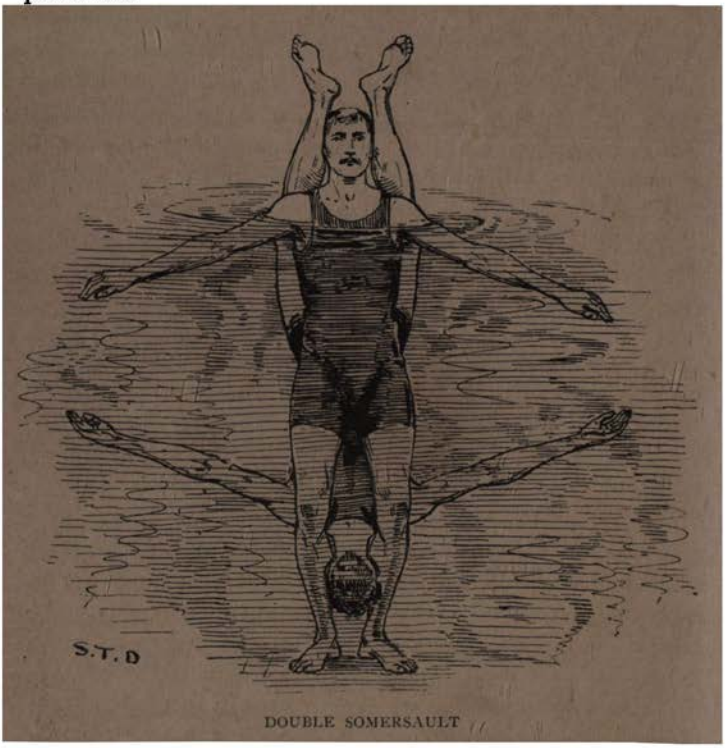
This trick requires more than ordinary practice, especially as it is performed by two swimmers. It is useless to attempt it unless both are able to perform the single backward somersault with ease, as each is required to assist the other as the turns are made.

At starting, the two swimmers should stand on the bottom of the bath, one behind the other, in water sufficiently deep to reach up to the shoulder. The swimmer in front extends his arms out at right angles to the body in line with the shoulder, and opens his legs until the feet are about a foot apart.

Then the swimmer at the back, after inflating his lungs, goes below the surface and places his head between the legs of the other performer, at the same time bending his legs backwards so that they closely approach the head of the front

man, who in turn leans his head back in order that the second man may grasp it with his legs.

At this moment one head is under water and one above, the head in each case being clasped by the legs of the other performer.



DOUBLE SOMERSAULT

Immediately both heads are firmly held, the performers begin to turn round backwards, the arm movement of the backward somersault being the means of progression. Each should bend well to the rear. As the uppermost swimmer disappears below the surface, the head of the one underneath should rapidly emerge, and as it swings over it will rise suffi-

ciently to allow of a breath being taken. After repeating the somersault four or five times, the grip with the legs may be released under water, and the swimmers rise gently into the respective positions they occupied prior to the start.

MARCHING ON THE WATER

This is a very favourite trick with performers, no doubt owing to its misleading and high-sounding title. When an ordinary spectator notes this on his programme or hears it

MARCHING ON THE WATER

announced, he generally cranes his neck forward in vivid expectation that something is about to happen hitherto undreamt of in his philosophy. But he is quickly undeceived, for the trick bears no resemblance to what its title indicates.

It is certainly graceful, and as it is easy it enables a performer to obtain comparative rest between difficult feats. It therefore usually follows a trick which has required some exertion. But little description is necessary. The swimmer simply lies on the back in a floating position with the arms carelessly folded, either on the chest or behind him, and the head slightly inclined back. The body is then propelled feet first by the alternate actions of the legs, as when walking. To do it effectively. pressure must be applied in the positive

stroke, that is, when the foot is being drawn down. The negative movement or straightening of the leg must be done gently.

SWIMMING ON THE BREAST FEET FIRST

In beginning this trick the body should be placed on the surface as in the breast-stroke, with legs and arms closed and at full stretch in line with the body. Then the feet should be moved gently from the knees, each leg acting separately.

SWIMMING ON THE BREAST FEET FIRST

Alternately each foot is thrust backwards, the toes being well extended to the rear, and care taken that neither of the feet appears above the surface. The action of the hands is similar to that adopted in the 'Propeller,' but as the body is on the breast the palms should be pointed downwards, and the arms drawn in towards the body until the hands are in line with the head. The sculling action should then be started, the hands being worked together from the wrist and forearm, and as soon as a start is effected the body will move backward with apparently but little effort.

THE PROPELLER

It requires considerable practice to attain perfection in this trick. One must be able to float well, and so balance the body as to counteract the sculling action of the arms while the exercise is being performed. The movement has the tendency of raising the head above the level at which it ought to be, in order to allow the body to float properly, and thereby brings about the sinking of the feet. At the start the swimmer should turn upon his back, place his hands at the side of his body, keep the head back and the feet closed. A slight movement of the hands

THE PROPELLER

from the wrists will suffice to keep the body in position on the surface. Then swing the arms with a sweep from the body, under the surface of the water, until they are at full stretch beyond the head. This action propels the body feet foremost. Directly the body is in motion the hands should be moved, by the wrists and forearms only, in semicircular or scoop-like sweeps, the palms being turned outwards and the thumbs to the front. The pace can be easily regulated, and if necessary the body turned round, by slackening the movement of one hand and increasing that of the other, the body then turning to that side on which the slower movement is taking place. A stoppage can be made by bringing the arms to the side again. This trick, although somewhat difficult to learn, has a simple and graceful appearance, and becomes very interesting in practice, especially when the changes of position which can be brought about by any slight alterations of the hand move-

ments, as well as the small force required to keep the body in motion, are studied on scientific lines.

THE PENDULUM

To perform this trick the body should be allowed to float on the water with the arms stretched out well beyond the head but in line with the body. The head should be thrown well back and the body kept perfectly still. A good inspiration is then taken and the head brought forward, as if the swimmer wanted to look at his feet. At the same time the hands are drawn very gently towards the head, and by reason of this action the feet at once begin to sink and the body to assume a perpendicular position in the water. This motion is accelerated by inclining the head still more forward.

THE PENDULUM

As soon as the body is perpendicular the arms should be gently brought to the front of the body and extended well out, the head in the meantime being sunk between the arms until the face and arms are lying on the surface of the water, as when 'hanging on' after a plunge. When the arms and head are well down, the feet will instantly rise and the body float on the surface face downwards. In order to come back to the first position,

the head is slowly inclined backward and the hands drawn in to the back of the head. This will cause the feet again to sink and the body to swing back to a perpendicular position, with the face above water. Then extend the arms well behind the head, keeping the palms upward, and gradually incline the head back until the legs rise again to the surface and the body floats face upward.

These movements if repeated produce a gentle swinging motion of the body, somewhat analogous to that of a pendulum ; hence the name of the trick. They must be done regularly and clearly, or else the effect will be spoiled, and during the whole time the legs must be kept straight and closed.

It is a trick which can be easily accomplished after a little practice by any person who can float, and when well done looks very neat. It is merely a balancing feat, the inflated chest being the centre of action. Inspirations must be taken just as the body is turning face downward, and immediately it is lifted above the surface for the return movement.

THE PLANK OR GLIDE

For the trick known as 'the Plank or Glide' it is necessary to have two swimmers. They place themselves in line on the surface of the water with the feet of one close to the head of the other. The first has to float motionless with the legs closed and the arms extended beyond the head. The second swimmer then clutches the ankles of the first and draws him towards his head until the two bodies are in a straight line on the surface of the water. As soon as they are fairly balanced, No. 2 dips his head below the surface, at the same time giving a sharp pull to the ankles of No. 1, which draws that swimmer directly over the other. The hold on the ankles is immediately loosened, and by this move the first swimmer glides over the second, whilst the second glides under the first. The pull by the second swimmer is sufficient to cause the two bodies to pass rapidly one over the other. As the pass is effected the

swimmer underneath has to watch the travelling body above, and as the head of No. 1 comes towards his feet the toes of No. 2 must be lifted so as to pass into the space between the head and locked arms of No. 1, whose hands will then hook on to the feet of the swimmer who has passed under him. No. 2 then becomes No. 1, and the performance can be repeated.

THE PLANK OR GLIDE

If carried out mechanically and without splashing, as if two planks were being passed one over the other, this trick forms a very pretty addition to an exhibition of fancy swimming.

PORPOISE SWIMMING

An exhibition of 'porpoise' swimming makes a very interesting and diverting change from the usual list of fancy tricks, and if a number of swimmers take part in the entertainment, and perform the trick together, it becomes highly amusing to the spectators.

When learning this trick there are no very great difficulties to be overcome. The ability to float is unnecessary, and only swimming power is needed, the body being guided in its upward and downward course by the action of the arms, and the bending forwards and backwards of the head. For speed the performer must rely entirely upon the legs, except, of course, when swimming under water, when the breast-stroke is brought into play.

It is stated by some writers that in order to execute the feat well the swimmer should spring from the bottom of the bath or some other firm take-off; but this is absurd in view of the fact that the trick is intended to demonstrate the power a

PORPOISE SWIMMING (*a*)

swimmer has in the water, as well as to imitate the action of a porpoise, whose take-off is not as a rule very firm.

The trick can be accomplished quite easily, and far more gracefully than by adopting such an artificial aid. The lungs

PORPOISE SWIMMING (*b*)

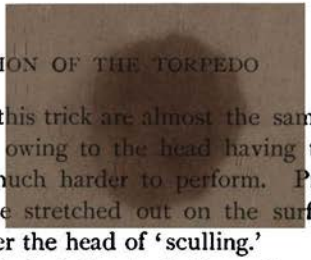
should first of all be cleared, and then a full breath taken in. As the chest begins to inflate the body should be sunk under water, and the mouth go below the surface as the inspiration finishes. A couple of under-water breast-strokes, a turn of the head upwards, and a vigorous kick with the legs will send the head out of the water.

As the body is rising an ordinary arm-stroke should be taken, and then, as soon as the head appears, the arms, which

must be recovered to the first position of the breast-stroke, should be forced together downward through the water from the level of the surface to the side of the hips. This will cause the body to roll over as if working on a firm pivot.

Immediately the hands begin to come down towards the hips the legs should be straightened by means of a vigorous kick, so as to force the head and shoulders out of the water. A quick inclination of the head towards the chest will assist the body in its roll over, and the back and legs will in turn become visible after the head is again sunk, the legs being the last to go down, in almost the same spot where the head disappeared.

If the breathing be fairly regulated, this trick can be performed a number of times in succession.



IMITATION OF THE TORPEDO

The movements in this trick are almost the same as those in the 'Propeller,' but owing to the head having to be kept under water they are much harder to perform. Prior to the start the body should be stretched out on the surface in the position described under the head of 'sculling.'

As soon as the body is fairly steady the palms should be turned upwards, and the arms at once brought through the water until they are beyond the head. Then the legs should be raised from the hips, being kept rigid all the time. This will cause the arms, head, the trunk, and the legs as far as the ankles to become submerged, the ankles and feet alone being above the surface. The hands should then be moved in the same way as in the 'Propeller,' except that at the conclusion of each stroke a slight upward pressure should be made with the palms of the hands, in order that the position of the body just below the surface may be maintained.

When the hands are in motion the body will go ahead feet foremost, and if the movement be maintained at an even pace,

some twenty or thirty yards may be covered. If, however, a number of tricks are being performed by the same swimmer, only a short distance should be traversed, as it is unwise to overstrain the lungs. This remark practically applies to all prolonged under-water tricks.

In imitating the torpedo care should be taken to direct the body in a straight line from the starting-point. This can easily

IMITATION OF THE TORPEDO

be done, as the swimmer can see through the water and alter his course if deviating to the right or left.

IMITATION OF THE SPINNING-TOP

This requires very little description. It is a very well-known trick, and under the title of the 'Washing-tub' generally finds a place in the programme of a professional swimmer.

The performer should turn on his back, then double the body by bringing up the knees to the chin, and cross the legs, the body meantime being kept in position by the working of the hands as if sculling. As soon as the required balance is obtained, the swimmer begins to push the water away from the body with the right hand, and, as it were, pull the water towards the body with the left hand, the wrists being turned from side to side as the propelling and recovering portions of the movement are made.

This action will cause the body to spin round rapidly on its own axis.

THE STEAM TUG

This trick is accomplished by turning on the back, as if sculling, and then raising one leg until it is at right angles to the body, the other being kept straight and stiff. The action of the hands will send the body along the surface head first in a quaint manner. When the elevation of one leg can be done

THE STEAM TUG

well, the other leg can by practice be raised also. More force is then required in the working of the hands in order to keep the legs in position, but if the action take place directly under the legs the difficulty will be easily surmounted. When both legs are up the body can be made to rotate by using the hands in the same manner as in the spinning-top.

SWIMMING HANDS AND FEET TIED

The ordinary method of swimming in this fashion is with the ankles and wrists firmly tied with tapes. The swimmer dives in somewhat obliquely, as if going for a plunge, so that

he may rise to the surface on his breast without taking a stroke. Then the legs are drawn up until the calves closely approach the back of the thighs, from which position the legs are kicked out together. The arms are drawn down through the water together to the front of the body, and then shot out again. If the pressure be not too firmly applied, the movement will look very neat, although, of course, the pace will be slow; but this is not of much consequence, as the object of performing the feat is to show that swimming can be carried out even under such a disadvantage as having the hands and feet fastened.

Another method often demonstrated by experts is with the hands tied behind the back or to the side. The performer must swim on the back, and can only use the legs for propulsion. Progression then becomes easy, as it is a lighter task to swim on the back with hands and feet tied than on the breast under similar conditions. If the person giving the exhibition can float well, a number of surface-floating tricks can be essayed when tied up.

There are a few professional swimmers who delight in tying themselves up with lengths of rope and then giving public exhibitions in the open, especially in running water, where it is much easier than in a bath. In a stream, a tidal river, or the sea, the body is carried forward by the motion of the water, and the exertion necessary to maintain it on the surface is therefore less than in still water. This method of swimming is not of much practical use, but it shows what it is really possible to do in the water. To attempt the feat the man must be of more than average ability as an exponent of scientific and trick swimming.

MONTE CRISTO SACK FEAT

This is a capital trick for entertainments, and one from which a good deal of amusement can be obtained if the officials co-operate with the 'prisoner' in working up a dramatic scene. An assistant who knows how to tie the knots round

the sack is necessary, and if he be a clever actor, excitement will be at fever heat when the swimmer is thrown into the water.

The usual plan is to have a large sack, so that when the swimmer gets in there is plenty of room to move about. Place some heavy weights at the bottom, and cut a hole in the top for the double end of the rope to be passed through. The person who is to be tied up then gets into the sack, and takes firmly hold of the doubled rope and the portion of the sack near it. Then, after some preliminary warnings as to care, the need for watching and timing, as well as fetching him up if under too long, the assistant should, as it were, force him in, take hold of the ends of the rope, pass them round the sack and tie them tightly, even going so far as to invite on-lookers to add an extra knot. The knots should be made on the other side of the sack from that on which the doubled rope has been passed through.

MONTE CRISTO SACK FEAT

As soon as the fastening is completed, a warning should be given to the swimmer that he may inflate the lungs, and then he is thrown into the water. The weights in the sack will cause him to sink feet first. After staying in the sack a few seconds, that portion of the rope held by him should be released and the sack pushed open with the hand. After swimming a little way under the water he should rise to the surface.

From a spectacular point of view this feat appears to be very dangerous, but, as will be easily seen, it is a mere trick. Its dramatic effect may be heightened by using a sack made of calico or some other easily-torn texture. Then the swimmer should be provided with a knife, and the audience invited to tie him up. After cutting a small hole the swimmer can tear the sack to pieces.

SMOKING UNDER WATER

This is a very simple trick, but a smart swimmer can so perform it as to arouse the curiosity of the majority of the spectators.

A pipe or cigar should be smoked until it is well alight, and the swimmer take up his stand on the side of the bath or on the diving-board. The lungs should then be inflated, the head sunk over as for a dive, and just before the feet leave the diving-board the bowl of the pipe, or in the case of a cigar the lighted end, thrust rapidly into the mouth. Particular care must be taken not to draw inwards.

When once in the water the breast-stroke must be used, and at each stroke of the arms the swimmer should blow gently at the pipe or cigar. This will cause the smoke to issue from the mouthpiece and curl upwards to the surface of the water.

After going about ten yards a turn to the side should be made. As the head comes to the surface, the smoke may be blown out, the body well raised, and the pipe or cigar quickly removed, care being taken that the lighted end is not wetted. Then the return can be made to the starting-point, smoking above the surface, by swimming on the side.

It is absurd to attempt this trick in public unless it can be done neatly. The placing in and removing of the pipe from the mouth must be carefully practised, or else the shallowness of the deception will at once become apparent to any sharp-witted spectator.

EATING UNDER WATER

If this feat be executed in a bath, a spot where the water is about three or four feet deep should be selected. A sponge cake should be held in the left hand, which is kept out of the water, the rest of the body being sunk below the surface, one knee resting on the bottom. The right arm should be brought out of the water and a piece of the cake broken off. The piece should then be sharply carried under the water to the mouth, and, just as it is placed in, a gentle exhalation should be made so that the water may not enter the mouth.

After properly eating the first piece, the rest of the cake should be taken and eaten in a similar manner. Then the left hand should be sunk below the surface, and the head raised gently out of the water.

Before descending below the surface the lungs should be inflated, because, if this precaution be neglected the swimmer will not be able to stay under long enough to eat all the cake, and the feat is spoilt if the mouth has to be raised above the water for an inspiration.

Other exhibitions of eating are occasionally given by persons able to stay under water for some time, such as peeling an orange and eating a portion of it; but these are better adapted for tank performances, when the whole of the movements can be clearly seen by the audience.

DRINKING UNDER WATER

This feat is more frequently done in a tank than in a bath, as it can then be closely watched by the spectators, whereas in a large body of water it is difficult to see what the swimmer is doing, and many believe that the contents of the bottle or other vessel used are simply emptied into the water. This is not so. A small lemonade bottle is the best to use for the purpose. It should be half-filled with milk and then corked.

The swimmer, after taking the bottle under water, should uncork it with great care, so as to prevent the surrounding water from getting into it. The mouth of the bottle should be placed between the lips, and the cork pulled out sideways with the right hand. As soon as the cork is withdrawn the drinking should be commenced. If the milk does not enter the mouth easily, a little air should be blown out through the nostrils, and the contents of the bottle will then be quickly emptied into the mouth. Before coming to the surface the bottle should be recorked. This trick is not an easy one. It requires perfect management of the breath and a fair amount of staying power, as, in order to keep under water, it is not possible to fully inflate the lungs. When weighted belts are used this difficulty can be overcome, and more time taken to accomplish the feat properly. Heavy belts are used by professionals for a number of under-water tricks, and that is the means whereby some of them can, when demonstrating their ability to do this particular feat, remain under water, balance the bottle in the hand, take a drink, recork it, and then, after some play, uncork it again and finish the contents. In rising to the surface all movements should be made gently and gracefully.

STAYING UNDER WATER

From a swimming point of view no particular merit attaches to this performance, but some remarkable feats have been publicly accomplished by experts. Most writers insist that it is impossible to remain under water more than one or two minutes without suffocation, but there are many well-authenticated cases of longer stays under the water by persons wearing weighted belts. For instance, James Finney of Oldham, in the presence of hundreds of persons, remained in a tank with his head below the surface for 4 mins. 29½ secs. on April 7, 1886. That the time recorded was correct we have not the slightest doubt, for we have ourselves repeatedly seen the same excellent swimmer remain under water for over three minutes night after

night, his average time being 3 mins. 15 secs. or 3 mins. 20 secs. Peter Johnson was also a splendid under-water performer, and other members of the same famous family have shown similar ability.

In judging these feats or comparing them with those of the sponge-divers and others, the fact that it is far easier to do them in a tank or shallow water than in a deep bath or open water must not be overlooked. The water in a tank is warmed, and, as the volume of it is not great, the pressure is very low.

Great attention has to be paid to the lungs. They are cleared and then refilled with fresh air, the air being forced well down. If the lungs be properly inflated, a swimmer may perhaps remain under water at the first attempt some fifty seconds, and by regular practice can rapidly improve, a few seconds being added every day.

There is one great objection to this feat, and that is the exceedingly grave liability to serious or fatal injury. In the effort to prolong the time, insensibility will gradually steal over the performer, and if not quickly attended to dangerous complications may ensue, such as the breaking of a blood-vessel or damage to the tympanum. The strain upon the lungs and the system generally is so great that special care has to be taken by experts. As soon as any inconvenience is felt, a rapid rise to the surface should be made. There have been cases of men fainting from exhaustion after prolonged immersion. The feat is such a dangerous one that it should never on any account be made the subject of competition. To many persons, moreover, it is an extremely painful spectacle at any time.

SINKING TO THE BOTTOM AND RISING AGAIN TO THE SURFACE WITHOUT APPARENT MOTIVE POWER

There are very few swimmers who can achieve this. A thorough knowledge of motionless floating is indispensable, combined with the power to sink the body while the lungs are inflated, in order that it may rise again to the surface at will without bringing any swimming action into play.

Many persons imagine that some imperceptible motion is made with the limbs, but this is not the case ; the swimmer simply depends upon resources which an expert floater always has at command.

Those who are learning to float experience no difficulty in sinking, and their efforts are centred in the endeavour to sustain the body on the water. It is quite the opposite with the expert, who finds the greatest possible difficulty in sinking in a floating position and then rising again. Very careful management of the breath is required. Some of the air in the lungs must be forced out in order to sink, but yet sufficient must be retained to bring the body to the surface.

In motionless floating the body, by virtue of the operation of a natural law, rises slightly at each inspiration, and sinks again after an expiration. This is the important fact to be remembered.

When the body is floating motionless on the surface the lungs should be carefully cleared, and inflated two or three times, and the feat may then be attemped. At the time the last deep inspiration is taken the head should be slightly lifted, the hips dropped gently, and the fingers raised. These movements will destroy the buoyancy of the body and it will then sink, and a slight exhalation before going under the surface will send it to the bottom.

The exhalation must be slight, or otherwise the return cannot be made.

As soon as the body has sunk three or four feet below the surface, the downward impetus should be arrested by the straightening of the limbs to the ordinary floating position. Then contract the abdomen towards the chest, as this will add greatly to the floating power, and the body will begin to ascend. The body will, of course, rise much more slowly than it descended, but the face and chest will at length appear, upon which a quick gasp should be made, and the remainder of the body will at once float securely.

The performance of this feat illustrates the real power

which a good swimmer has in the water, and is likely to impart to the on-looker a confidence which he would otherwise not have gained.

It is not advisable to repeat the exhibition, because the undue strain may result in failure at the second essay. If this feat is done gracefully it produces a great impression.

HEARING UNDER WATER

It is often supposed that it is impossible to hear under water. This idea probably originated from the fact that when swimming on the side it is difficult to comprehend any remark even if shouted out, although a dull roar in the ear is apparent. When under water in a bath the dull sound can be heard if near the surface, and when in the sea the sound of an approaching steamer is audible from a long distance. Further, if the ear be placed on the bottom, even the sound made by the walking of persons on the beach becomes distinguishable. To clearly understand what is being said when under water in a bath the swimmer should lie on the bottom and place the ear against the side of the bath or steps. The person speaking should direct the voice to the edge of the bath, so that the sound waves travel down the side immediately over the head of the swimmer. The words can then be heard almost distinctly, provided they are pronounced audibly and slowly. In exhibitions the speaker should ask for a question from one of the audience, transmit it to the swimmer, and then allow him to come up and answer it openly.

Variations of many of the foregoing feats will be found under different names in programmes of professional performers, and very often two or more of them are blended together as one trick. For example the 'Steam Tug' is occasionally called the 'Shipwreck,' the exhibitor, after going some distance, sinking under water like a ship settling down, and then rising again with the raised leg in the same position. Again, in under-water feats, writing on a slate, singing—which by the way is actually done

under a pail with the head above water—playing trombones, walking on the bottom with the hands, the legs being above water, and picking up coins with the mouth are often added as extra tricks. All of these require practice, but do not merit special description.

CHAPTER VI

BATHING IN THE OPEN

SINCE the passing of the Baths and Washhouses Act open-water bathing has not been encouraged so much in this country as it ought to be, and the average swimmer of the present day hesitates, when it is at all chilly, to bathe in the open. Cold-water bathing has so often been strongly recommended by the medical profession that it requires no defence of ours. There are many men who bathe all the year round, even when their favourite water is ice-bound, and by habitual practice they have come to enjoy their morning dip so greatly and to reap such benefits from it that they would rather miss their breakfast than their bath. The reaction after a plunge in the open is something to be remembered. The body glows all over after the rub down, the spirits become light and elastic. If this reaction does not set in, it may safely be assumed that the bather has remained too long in the water or else is not in condition. To our mind the best time for fresh-water bathing is in the early morning. Then the swimmer moves so vigorously that he exercises his limbs in the best possible manner. The opportunities for fresh-water bathing are, we admit, limited, yet energetic action on the part of local bodies has done much to remedy this. At Victoria Park Lake some hundreds of schoolboys are annually taught to swim, whilst hundreds of others bathe under the supervision of a schools' association. There still exist a few open-air baths in different parts of the country, but the tendency is to replace them by covered baths.

It is impossible to gainsay the fact that covered baths are more likely to be a source of profit, or at any rate to pay expenses, than specially built open-air bathing-places, which, in the majority of cases, are but infrequently used during the greater part of the year, and are of course of no rental value as places of entertainment during the winter season.

In most of the English rivers and lakes there are recognised spots for bathing. Cambridge, Harrow, and Eton swimmers all practise out in the open, and who can say that the training thus obtained is not beneficial? Yet there are frequently outcries about the danger to health from bathing in open water. Most of these come from those effeminate swimmers who never dream of entering the water except under cover, and when it is at a high temperature. Open-water swimming should be regulated by common sense. A man cannot expect to stay in so long as in heated water, or to waste time on the bank before dressing, as so many do in the ordinary baths.

To rowing men, and particularly those who are fond of camping out, the ability to swim is particularly valuable. They who know not the pleasure of a dive into the deep lock pool in the early autumn, or the running header from some shady bank into the cool river on a hot summer's day, are men whose education in the essential pleasures of river life has been of a very inadequate character.

In fresh-water bathing some care has to be exercised on account of weeds and currents. It is unnecessary to point out that when bathing near locks or weirs the state of the stream should be taken into account, and that unless the swimmer be an expert it is best to avoid such places. Information can almost invariably be obtained from lock-keepers as to the best and safest spots for a dip, and if the bathers are unacquainted with the stream, advice should be sought and followed. If carried away in a swollen current, never attempt to swim across the stream; it is only the exercise of strength in vain. Select some spot on either bank and swim towards it. In diving the great danger to be feared is the presence of weeds. There is

very great need to be careful here, because when once well in them it is difficult to extricate a swimmer before unconsciousness ensues, and the would-be rescuer often has to give up the attempt. The swimmer when he finds himself in the midst of weeds should turn and swim with the current, rising to the surface as quickly as possible. He should not struggle, but swim gently; otherwise he will find himself entangled without hope of relief.

When practising over a course for a speed race, the services of a boatman well acquainted with the currents in the river should be secured, and every possible opportunity taken of learning the spots where the water is slack, as also the speediest route from point to point; for it is not always the straightaway course which is the best in the long run. In distance races, such as the championship over the Thames course from Kew to Putney Bridge, the services of a pilot are allowed on the day of the race, but in shorter races this assistance is not permitted. Frequent practice in starting from boats is desirable, and the proper method of entering a boat from the water should be mastered. When bathing from a boat the rudder should be removed and the swimmers should enter and leave the boat at the stern.

Winter bathing is more generally practised in the sea than in fresh water. There are, however, various clubs that carry out a winter programme, and even at such cold periods of the year as Christmas and New Year's Day many votaries of the art are to be found engaging in open-water competitions. At Glasgow a race is held in the River Clyde on New Year's Day, and in Hyde Park the Serpentine Club, ever since the year 1864, has promoted a Christmas morning handicap. On several occasions the race has had to be postponed from week to week owing to the lake being covered with ice, but the indomitable spirits who enter usually mitigate their anxiety by a dip into the icy water before retiring from the scene. A race in icy water on winter mornings is a choice bit of sport—for the on-lookers at any rate. Even if the Serpentine race cannot be held, there are

always enthusiasts ready with convenient hatchet or implement to make a hole for the bathers to have their plunge. For years an eccentric of a harmless nature used to provide supplementary fun for the early morning loungers. His dip was a regular performance, as well as his after run on the shore. To see the old man go tenderly down the bank in a pair of straw shoes, take the gear off, place them carefully at the edge of the lake, and then plunge in was a sight never to be forgotten. But his after performance was the best; out he would come, don his shoes, and go for a training spin along the bank. His average time for a hundred yards run could possibly be beaten, but his finishing feat no other man living could equal. With a leap forward he would stand on his hands and hoist his legs, shoes and all, into mid-air. It might have been for the purpose of fetching the blood to his head, or some scientific experiment known only to himself, but he never explained.

There are not many lady swimmers who bathe in open fresh water, privacy being somewhat difficult to obtain, but one of the famous among them is Mrs. Cecile Samuda, who bathes all through the summer in a large deep lake in the gardens at her residence, Shipton Court, Oxon. The water space is one hundred and seventy-five yards long and fifty wide, and the water so deep that it is impossible to stand anywhere in it. A header board is fitted at one end, seven feet above the surface. Mrs. Samuda takes a remarkable interest in the pastime. At the conclusion of each season at home her bathing party finishes up with a series of competitions lasting over a week. The hostess acts as judge, and allows each competitor three fair trials, her brother undertaking the duties of starter. The following is a copy of the programme of one of these interesting meetings. Some of the competitions would be quite outside the ability of many of our best speed swimmers.

PROGRAMME OF WATER SPORTS AND RACES, TO BE HELD AT SHIPTON COURT, SEPTEMBER 6 TO 11, 1890, ON THE LOWER LAKE

Prizes will be presented at the close of the week to the successful competitors for each separate race and exhibit.

First Day, September 6

1. Short Race. 50 yards. Ordinary swimming.
2. Short Race. 50 yards. Swimming on back.
3. Competition for Short Headers off the bank.
4. Competition for the best and longest Float.
5. Running Long Jump. Competitors to run hand-in-hand in couples, a prize for the first couple arriving on shore without parting company.
6. Competition for a Back-Header.

Second Day, September 7

1. Long Swimming Race. 350 yards, without once touching the bank.
2. Competition for the three best headers off the 7 ft. board.

Third Day, September 8

1. Competition, Swimming with arms only, legs tied, 50 yards.
2. Competition, Swimming with legs only, hands clasped behind the neck.
3. Competition for running Header and race of 175 yards.

Fourth Day, September 9

1. Competition, Race swimming on the back 350 yards, without once turning or touching the bank.

Fifth Day, September 10

1. Competition for the best Long Header.
2. Competition for the best Dive.
3. Competition for the best running Header off the 7 ft. board.
4. A prize for the person who can remain longest under water.

Sixth Day, September 11

A GRAND WATER CARNIVAL

1. The whole of the competitors shall attend fully equipped in any old clothes they can collect, including hats, corsets, boots, gloves, parasols, &c. and row out in the boat to the middle of the lake, when the boat shall be overturned, the occupants swimming ashore as best they can; a prize for the first who shall reach the shore in safety.

After which, having attired themselves in proper bathing apparel, the week's competitors are at liberty to exhibit as many water-feats as they choose for the benefit of spectators; such as writing a letter, placing it in an envelope, addressing it and returning with it safely to shore, using a writing-pad for the purpose.

Catherine Wheels in the water.

Smoking under water.

Undressing in the water.

Skipping through a hoop, &c.

Mrs. Samuda is equally fond of sea-bathing, and on two occasions has been successful in saving life. One of those she rescued was a tall powerful man who had been seized with cramp, but having confidence in her powers did not struggle; the other was a lady, who, although able to swim, became nervous and clung frantically to the neck of her rescuer.

Mrs. Samuda's eldest sister was also a magnificent swimmer, and on one occasion, when she was sixteen years of age, swam ashore a quarter of a mile completely dressed, not only wearing all the ordinary under garments of a lady, including corsets, but also attired in a heavy fishwife serge dress, boots, hat, and gloves, carrying in one hand a huge scarlet Turkey twill umbrella opened, and in the other a large bouquet of somewhat gaudy flowers, presented to her for the occasion. When staying at Cowes the party would go to sea in small boats, completely dressed, and after sundry races, duck hunts, &c., would upset their boats and swim ashore some two or three hundred yards.

The mere mention of the sea sends a thrill of delight through

the hearts of all true swimmers, for nothing is more glorious or delightful to them than a dip in the ocean. Bath swimming fades into mere insignificance in comparison with the joy of a plunge into the open sea. It is so manifestly invigorating that those who cannot or do not indulge in the pastime are to be pitied. The ladies seem especially to delight in sea bathing, possibly because their opportunities of swimming in baths are limited. To the genuine swimmer the ordinary bathing machine is a nuisance. He likes to plunge into deep water at once, and revels in the sea when it is at all rough. But this pleasure is of course denied to those who are not fairly good swimmers, for the tide or currents may quickly land them into danger from which it may be difficult to escape. No matter how expert a swimmer may be, he should always be accompanied by a boat when out some distance from shore; indeed, to disregard this precaution is simply to court fatalities. When once out from shore and in deep water, with the waves choppy or rolling in one after the other in quick succession, the accomplished swimmer experiences the keenest enjoyment. The sensation produced by the feeling of power and security in the midst of the mighty tumbling mass of water is altogether delightful, and those who have tried it can more fully appreciate the feeling which prompted Lord Byron to pen his famous lines in 'Childe Harold':

> And I have loved thee, Ocean! and my joy
> Of youthful sports was on thy breast to be
> Borne, like thy bubbles, onward: from a boy
> I wanton'd with thy breakers—they to me
> Were a delight; and if the freshening sea
> Made them a terror—'twas a pleasing fear,
> For I was as it were a child of thee,
> And trusted to thy billows far and near,
> And laid my hand upon thy mane—as I do here.

Mr. Ruskin gives a marvellous description of the sea as it appears to those who love to rest on its bosom. He says:

LADIES BATHING

Afloat, even twenty yards from the shore, we receive a totally different impression. Every wave around us appears vast, every one different from all the rest, and the breakers present, now that we see them with their backs towards us, the grand, extended, and varied lines of long curvature, which are peculiarly expressive both of velocity and power. Restlessness, before unfelt, is manifested in the vast, perpetual, changeful, undirected motion, not of wave after wave as it appears from the shore, but of the very same water rising and falling. Of waves that successively approach and break, each appears to the mind a separate individual, whose part being performed, it perishes, and is succeeded by another; and there is nothing in this to impress us with the idea of restlessness any more than in any successive and continuous functions of life and death. But it is when we perceive that it is no succession of waves, but the same water constantly rising, and crashing, and recoiling, and rolling in again in new forms and with fresh fury, that we perceive the perturbed spirit and feel the intensity of its unwearied rage. The sensation of power is also trebled, for not only is the vastness of apparent size much increased, but the whole action is different: it is not a passive wave rolling sleepily forward until it tumbles heavily, prostrated upon the beach, but a sweeping exertion of tremendous and living strength, which does not now appear to fall, but to burst upon the shore—which never perishes, but recoils and recovers.

Those who are accustomed to swim in baths and fresh water do not greatly care about swimming in the open sea when it is at all rough, not so much because of fear or want of ability as from lack of method in encountering the waves. Their want of knowledge causes them to exhaust their powers in a very short time, and we have seen many a good swimmer beaten in races by men inferior to him as regards speed and strength, but better versed in the science of rough-sea swimming. Nuttall, the great Stalybridge swimmer, was notoriously deficient in this ability until some time after he turned professional; but he gradually mastered the art, and is to-day quite as capable of meeting all comers in the sea as he is in the bath. The breast-stroke swimmer, when a wave is approaching, takes a breath and sinks his head so as to go through the wave

instead of breasting it and then sinking down into the trough. The over-arm swimmer follows the same course, and with a little practice will easily overcome the difficulty which is at first experienced in breathing regularly. If the waves be breasted, the swimmer is only thrown back and buffeted by the next wave before he has time to recover his wind or stroke, and a few minutes of this kind of work soon puts him out of the race. When not racing some real pleasure is to be obtained from 'breasting' the waves. The swimmer is at one moment forced up on the curl of the wave; the next second the water seems to recede from him, and he lies in a valley with an oncoming wave rearing its dark-green face against him, and, unless he be quick in his actions, bursting over him and with playful pleasantry filling his mouth and nostrils with water.

It is possible to remain in sea water longer than in fresh water, but the general rules relating to bathing, which will be found in the chapter on Training, apply quite as much to sea as to bath swimming. There are some dangers in sea bathing which can generally be avoided by presence of mind. If the swimmer should be taken out by a current, he should try to swim across it diagonally towards a spot on shore, even though that spot may be some distance from his dressing-box, and then swim to shore. If carried out when floating, he should never lose courage, but brace himself up for a long hard swim. Cramp is the dreaded bane of the swimmer, and for this curse a knowledge of scientific swimming will be useful, as he can then keep himself afloat while chafing the affected limb, or else float and try to straighten it. Jelly-fishes are often a source of annoyance, and their sting is very irritating. Some of them leave wide, strap-like marks upon the skin. A solution of carbonate of soda, or lime-water, and, in extreme cases, cold lead-water are said to be the best remedies.

The hearing is often affected by continued sea-bathing, either from concussion, or else through water remaining in the

BATHERS UNDER THE HOE, PLYMOUTH—CHRISTMAS MORNING.

ear and producing disorder. The only remedy is the use of cotton-wool or other ear plugs.

It is absurd to imagine that a cold cannot be caught from bathing in sea water; yet it is a widespread belief among swimmers, and one which tends to make them utterly careless in rubbing down and dressing. After the bath a short run will brace up the system, as well as ward off any chill, and the swimmer will then feel all the better for his exertions.

The best periods for bathing cannot well be stated, for sometimes in July the water is very cold, whilst in other years good bathing can be enjoyed by ordinary persons in June, or even as early as March. In August the water is usually quite warm, and those who begin in that month can go on every morning until early in October, when the over-night frosts begin to make their appearance. The number of sea-bathers who daily indulge in a dip all the year round is far in excess of those who bathe in fresh water, and along our coasts there are many men who every morning, week in week out, plunge into the open sea. At Plymouth, on Christmas morn, they have a regular meeting under the Hoe, boys, youths, young and old men, all assembling. The Brighton swimmers emerge from their 'Hole in the Wall,' and gambol on the shingle. Portsmouth has its believers in winter bathing; in fact, most seaside towns have, and wherever a swimming club is to be found one or two 'all the year round men' can invariably be discovered. They maintain that immense benefit is derived from the practice, and that they enjoy their dip is undoubted.

The greatest authenticated long-distance swim in the sea without any artificial aid is that of Captain Webb across the English Channel. There have been many would-be imitators, but the feat still stands as the greatest on record.

Intense excitement was aroused in England, in the early part of August 1875, when it was announced that Webb intended shortly to attempt the feat of swimming across the English Channel without any artificial aid. Some few months previously, Captain Boyton, the American life-saving expert, had, after one

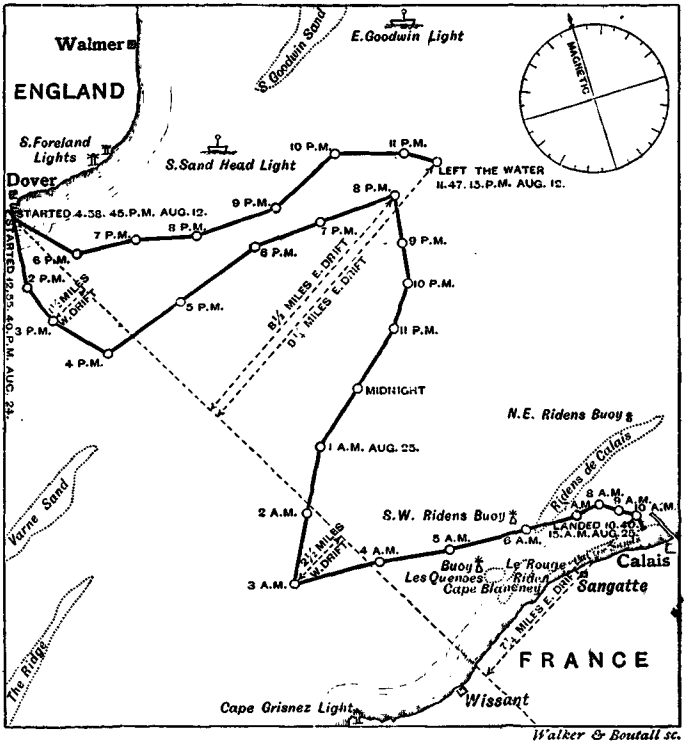
failure, successfully accomplished the feat when clothed in a patent dress; but although the journey demonstrated the great value of the dress, the paddle in itself was mere child's play in comparison with the task which Webb intended to perform.

Webb was born on January 19, 1848, at Irongate, near Dawley, in Shropshire, and was, therefore, not quite twenty-eight years of age when he accomplished the feat which has made his name renowned in England.

He learnt to swim when only seven years of age, and when on board the 'Conway' training ship, in the Mersey, saved the life of a comrade in danger of drowning. After leading a seafaring life for some years he returned to England able to swim a good breast-stroke, but he was not a fast swimmer. When he started for the Channel swim he was 5 ft. 8 in. high, measured 43 in. round the chest, and weighed about fourteen and a half stone. During his training he once swam out to the north-east Varne Buoy, which is more than half-way across the Channel, and also from Dover to Ramsgate, about eighteen miles, in 8 hrs. 45 mins., as well as in the Thames from Blackwall to Gravesend in 4 hrs. 52 mins.

The first attempt made by Webb resulted, like that of Boyton, in failure. This trial took place on August 12, 1875, and after swimming for 6 hrs. 48 mins. 30 secs., during which period he had covered thirteen and a half miles, Webb was compelled to leave the water owing to his having been drifted nine and three-quarter miles to the eastward of his course by the north-east stream and stress of weather. He was then nine and a quarter miles from Parker's Gap, between St. Margaret's and Walmer Castle, the nearest point on the English coast, and twelve and a half miles from Sangatte, the nearest spot on the French coast, one and a half mile on the French side of the East Goodwin Light, and two miles inside of Cape Grisnez. Webb started 2 hrs. 25 mins. before high water at Dover, on a tide rising 13 ft. 7 in. at that port. Even during the first hour of his swim, which was in slack water, he could not keep within

a point of his proper course—S.E. by S. ½ S.—and from 6 P.M. he was drifted rapidly to leeward by the breeze and tide. From 9 to 10 P.M. he had been breaking seven and a half points off his course, and as the south-west stream had but barely



MAP OF CHANNEL

begun to ebb when he gave up, no estimate could be formed as to the probable distance he would have gone west on it.

The chart, which is here reproduced by permission from the 'Field' newspaper, indicates the hourly progress and position of the 'Captain' during his marvellous swim on August 24 and 25, 1875, as well as the first swim previously mentioned.

The particulars of the feat are taken from the special report made by the representative of the same paper.

In his second and successful trial Webb started three and a quarter hours before high water at Dover on a 15 ft. 10 in. tide. This gave him one hour and three-quarters of the south-west stream, wherein he made one and a half mile of westing; five and a quarter hours of north-east stream caused him to make eight and a half miles easting; seven and a half hours south-west stream took him two and a half miles to the westward of his course; and seven hours north-east stream drifted him seven and a quarter miles to the eastward. He occupied three tides, in addition to one hour and three-quarters of south-west stream at the start, and about three-quarters of an hour slack water under Calais Pier at the finish, which protected him from the south-west stream then just beginning to ebb.

The nearest point of French land from where he dived was Cape Grisnez, distant seventeen and a half miles. His point of landing is twenty-one and a quarter miles from Dover, as the crow flies, but the actual length of the swim was thirty-nine and a half miles. Boyton, when he *paddled* across, took 1 hr. 33 mins. longer to cover about twenty-nine miles of water than Webb did to *swim* ten miles further.

Very little rest was taken by Webb, in fact hardly any. When he did stop it was to take refreshment, and then he was treading water. During the whole of the time he had no recourse to artificial aid in any way. Of this there is indisputable proof, for the journalists who accompanied him across were most careful in their observations, and were men whose accuracy could be absolutely relied upon. The temperature of the water was about 65°, and the most extraordinary part of the feat was the fact that Webb never complained of cold, and was only affected during his twenty-one hours' immersion by drowsiness through want of sleep, and fatigue from the terrible exertion. Before plunging in, he was well rubbed with porpoise oil, and when he landed on Calais Sands, the sailors who

helped him to a carriage described him as feeling like a lump of cold tallow.

For the first fifteen hours the weather was splendid. The sea was as smooth as glass, the sun obscured during the day by a haze so that the heat did not affect his head, and in the night a three-quarter moon lighted him on his way. The worst time began at 3 A.M. on August 25, as then drowsiness had to be overcome, and rough water was entered. At this hour he was only some four and a half miles off Cape Grisnez, and although he was not then strong enough to strike out a direct course athwart the new N.E. stream for land, he was fetching well in for Sangatte, where he would undoubtedly have landed between 7 and 8 A.M., had adverse weather not set in. After this it was only the man's indomitable pluck that kept him going. He finally landed on Calais Sands after having been in the water 21 hours 45 minutes.

Of course it was impossible to foresee the advent of bad weather at the close of the journey, but, as it afterwards turned out, had Webb started at midnight on August 23–24, he would have encountered just such a breeze as troubled him at the end of the journey, and this would have been preferable when he was fresh. Further, if he had plunged in an hour or an hour and a half earlier than he actually did, he would have made more westing, and have avoided being drifted on to the broad part of the Straits, to the east of Cape Grisnez, at a time when all his strength and pluck were being severely taxed.

Throughout the journey, Webb swam on his breast, with slow and steady arm strokes, and powerful leg action, averaging about twenty per minute. He swam very high in the water, and at the conclusion of each stroke the soles of his feet emerged from the water. Such swimmers as Webb are men of their generation. His pluck and daring were of a high order, his straightforwardness unquestionable, and his sad death in the rapids of Niagara on July 24, 1883, therefore, all the more regrettable. He went there as a man wrecked in

constitution, and playing what he must have known to be a losing game. The accomplishment of the grand feat we have described was the cause which led to his almost suicidal end, and all good sportsmen should remember Webb as the Channel hero, and let sink into oblivion the remembrance of him as the 'Madman of Niagara.'

There can be no doubt that the encouragement of sea swimming, not only as a pastime but for practical purposes, is most beneficial to fishermen and those who go down to the

PORTSMOUTH GENTLEMEN'S STAGE

sea in ships, as well as all those who are engaged in pursuits connected with shipping, and at many coast towns the annual swimming matches are a great source of attraction. The distances are usually much longer than the majority of bath swimmers care to enter for, but coast men wisely believe that the ability to swim for a long distance if necessary is the true ideal of a swimmer, and they consider that class of sport in their programmes accordingly. The matches which take place on the West Coast of England every year are the most important races of the kind that are held in Great Britain. We

take the Plymouth meeting as an example. It is held in the sea just off the Hoe, and is attended by persons from all parts of Devon and Cornwall. Special trains are run by the railway companies to the town, and by the time the racing begins the Hoe and Pier are black with people, while the water in the vicinity of the course is crowded with craft. The shape of the harbour lends additional charm to the scene, as the Hoe forms a natural amphitheatre accommodating thousands upon thousands of spectators ; and the beautiful view across the harbour to Mount Edgcumbe and the Breakwater all tend indelibly to impress the striking picture upon any swimmers whose good fortune it has been to be able to compete at one of the meetings. But what perhaps, to a swimmer, seems the most extraordinary, is the almost absolute omission of short-distance racing and handicaps of any character. The following were the principal events in 1891 : Two hundred yards race for boys under fourteen years of age ; three hundred yards race for boys under fifteen years of age ; four hundred yards race for boys under sixteen years of age ; five hundred yards race for youths under eighteen years of age ; five hundred yards open amateur race ; one thousand yards professional race. In all, some eighteen matches were contested during the afternoon, and considerable amusement was caused the London division by the announcement on the programme, that a two hundred and fifty yards race for residents was a 'special short race,' for many bath swimmers would be unable to stay the distance at anything like racing speed. A similar gathering takes place at Penzance every year, shortly before or after Plymouth, according to the state of the tide, and one also at St. Ives. A fresh-water meeting at Exeter usually finishes the week's sport. At Douglas, Isle of Man, Jersey, Portsmouth, Brighton, many places along the Scotch coast, &c., meetings are annually held. Jersey and Portsmouth are, perhaps, the two best known coast organisations, apart from those in the West of England. They both have an enormous list of members, and their annual meetings evoke very much interest. The bathing place at Jersey

is a charming resort, which the officers of the club are always improving, so as to afford the utmost comfort to visitors. At Portsmouth, the club has to use stages, which are run out from the beach on huge wooden wheels, cased with iron. They are admirably suited for the work, and are always full of bathers during the season.

On the wooden platform a light iron framework, extending nearly the whole length of the stage, is erected. This framework is covered with sailcloth, and so forms a complete canvas shed. At the entrance end of the stage, which is approached from the beach by a movable gangway, is a small compartment fitted with lockers for the use of the attendants. From this compartment the swimmers step out on to the gangway running down the side of the stage, and walk along aided by a guiding rope to the end of the platform, where the entrance to the covered part is placed. The uncovered part of the stage, which is of course the end farthest away from the beach, is protected by side rails and shielded by canvas. A spring diving-board is fixed at this point, and close to it a strong ladder with broad treads. Similar ladders are on either side of the stage. The inside of the covered portion is divided on one side into a number of small compartments for the use of one or more swimmers. On the other side is a narrow passage, extending the whole length of the stage, into which all these cabins open. Each compartment is protected by a sailcloth curtain in front, and side partitions made of the same material. The stage is well ventilated, kept scrupulously clean, and properly drained. By means of a windlass and chain the huge erection can be slowly drawn up above high-water mark, or lowered into the sea as far as may be necessary according to the state of tide.

The best material for making ladies' bathing dresses is Turkey twill. The costume should be tight-fitting, and if considered desirable can be made with knickerbockers and a short skirt; but for speed swimming the absence of skirt is preferable. The costume should be trimmed with the club colours, and made neatly, but not elaborately. Waterproof

caps are worn by many ladies. For men the University costume is best.

There are a few places in England, such as Sea View, in the Isle of Wight, where whole families bathe together in the sea, but this pleasure is almost totally prohibited, either by beach regulations or custom, throughout Great Britain. Such an absurd veto is an abuse which needs remedying.

CHAPTER VII

LIFE-SAVING

THE ability to save life is the glorious privilege of a swimmer, and many are ever ready to risk their own lives in order to aid others in danger. That the ability ought to be cultivated is unquestionable, for the danger to the rescuer is thereby minimised, and his chances of successfully rendering efficient aid increased. Numbers of gallant men have been drowned in the vain endeavour to rescue because they have not understood the best methods of bringing a drowning person to land, or of releasing themselves from a grip when clutched. Courage and presence of mind are essentially needed. It may be argued that, if unpossessed of courage, a swimmer would never go out to the rescue of another. That may be so, but it by no means follows that presence of mind under difficulties is inherent to the courageous. To accomplish a rescue with the least possible danger the two should be combined.

The greatest honour that a swimmer can obtain is the medal of the Royal Humane Society. It is the Victoria Cross of swimming, and its possessor ranks far above the mere holder of fast swimming championships. The Royal Humane Society was founded at a time when ignorant prejudice against all attempts at saving life was rife. It has not entirely overcome this antipathy even yet, for at the present day strange superstitious ideas as to the evil consequences of rescuing drowning persons or of touching the apparently drowned exist in our own

country; but the gradual spread of education will, no doubt, tend to dispel from the minds of fishermen and others these incongruous, cruel, and inhuman beliefs. A most painful case, whereby two lives were sacrificed to superstition, occurred as recently as July, 1891, at Bundoran, County Donegal. About ten o'clock in the morning two young ladies went to bathe. The tide was beginning to ebb, and a ground sea or under tow was on. The ladies were noticed to be in distress, but before anything was done they were adrift on the ebb tide and out of their depth. A brother of one of them dashed in, but became exhausted and had to be rescued. Then a boat was put out from the pier, but it was too small for the heavy sea and the men returned for a larger boat. The boatmen pulled away with a will and eventually reached the ladies, one of whom was supporting the other. Only for a minute or so had her head been noticed under water when the boat reached the spot, and one of the men, reaching over, caught her by the arm. Then, after acting bravely, the boatmen gave way to deplorable superstition. There was still a chance of resuscitating at least one of the ladies, but, fearful lest one or both should be dead, they refused to take either of the bodies into the boat, and began dragging them behind their craft as if they had been logs of wood. It was 'unlucky' to take a corpse on board; there would be no successful fishing if a dead body were landed on the pier; and so, instead of pulling to the nearest landing-place, the boat, with these poor creatures trailing behind, was headed for the shore. The spectators were horror-stricken as they watched the faces of the girls rise and fall in the waves, and when the craft came close to land their excitement was still further increased by the action of the crew, who stood up instead of leaping out after their boat had grounded and fetching the bodies ashore. Once more superstition was at work. Ill-luck would follow them if they wet themselves bringing a corpse to land; the onlookers had therefore to rush out and fetch in the bodies. The ladies were then past human aid.

Some of the Cornish fishermen are also still possessed of similar dreadful superstitions. Frequent references to the subject are to be found in English literature. The refusal of Bryce the pedlar, in Sir Walter Scott's tale of the 'Pirate,' to assist Mordaunt in rescuing a sailor from drowning is explained in the remark of 'Are you mad? you that have lived sae lang in Zetland, to risk the saving of a drowning man. Wot ye not if ye bring him to life again, he will be sure to do you some capital injury?' This superstition, that ill-luck or injury will follow the rendering of help to a fellow-creature when in dire need, is common in some form or other to the ignorant of most countries. In China the spirit of a drowned man is supposed to wander over the water until appeased by the death of another person; in Germany the river spirit is the evil-minded creature to whose sacrifice all accidental drownings are due; the Bohemian imagines that death to himself will follow, or else ill-luck to his fishing, if he snatch from the water-demon's hands another person. Some nations even go so far as to assist a man in drowning instead of helping him out of the water; and the Kamtchadals, even if the man manages to get out, will not receive him into their house, but reckon him as dead.

It is a pleasure to turn from these gruesome stories to the records of the noble deeds which brighten the page of history. Every nation has its true heroes, ever ready to risk life and limb to serve others without hope of reward or thought of recognition; and although many such cases are brought to the notice of the various humane societies, there are many others who never trouble about publicity, and can hardly be induced to accept the honours which are thrust upon them. Of men who have spent their whole lives in the performance of brave deeds, the two swimmers who perhaps stand out most prominently are Mark Addy of Salford, Manchester, England, and Captain W. D. Andrews, of Toronto, Canada.

So greatly was Mark Addy held in respect by his fellow-townsmen, that on his death vast crowds testified their appreciation of his worth by attending the funeral or lining the streets

along which the procession passed. At almost every house in the Borough signs of mourning were visible. Mark Addy's father was a boat-builder and waterman in Manchester, and young Mark was born at 2 Stage Buildings, Parsonage, Blackfriars Street, Manchester, in April 1838. Addy gained his knowledge of swimming at the old Greengate Baths, Salford, but before acquiring the art he began his noble career as a life-saver when but thirteen years of age by rescuing a lad in danger of drowning in the Irwell. In this his first case the rescue was effected by means of a hastily constructed raft. Addy saved life after life, and after his thirty-seventh rescue it was decided to publicly reward him for his noble work. On January 12, 1878, a large and enthusiastic meeting was held at Salford Town Hall, under the presidency of the then Mayor of Salford (Mr. Alderman Walmsley). Members of Parliament, town councillors, and many prominent burgesses gathered together to do honour to this simple-minded brave man, who took all the honours meekly, as befits a hero. The hall was filled to overflowing, and throughout the proceedings there was a large crowd outside clamouring for admission. The address to Addy, which was accompanied by a purse of two hundred guineas, was as follows :

Mark Addy,—Your townsmen of Salford have long and admiringly watched your heroic devotedness in rescuing from imminent death the many precious lives which, but for your bravery, would have been lost to society. Mere admiration fails to satisfy the impulses which your generous deeds of daring have awakened, and, therefore, not as a reward, but as a small token of their high and earnest appreciation of the repeated risks to your own life, in snatching from the jaws of death the lives of others, they ask your acceptance of a purse of 200 guineas. It is but a poor contribution if reckoned as a recompense. There are services rendered to humanity which it is impossible to over-estimate, and yours are of them, and this is less a requital than a simple recognition in earnest words intensified by such pecuniary sacrifice as your numerous admirers can afford. The highest acts of manly daring and devotion that awaken human admiration are those in which the rescuer from death, totally forgetful of self, and inspired only with

compassion for those in danger, disregards his own life in his eagerness to save theirs from peril. The badges of honour which associated philanthropy and royal patronage confer for such courage you have in part already received.

Accept now from your neighbours and friends their humble meed of commendation. And if this is but feebly expressed commensurately with your deserts, still be assured that the offering is enriched with the homage of a thousand hearts that recognise your worth, and throb with a generous enthusiasm at the remembrance of your deeds of valour and self-sacrifice, only then can the gift acquire its true proportion and significance.

The presentation was made by Mr. W. Charley, M.P., and immediately after the ceremony Mr. James Smith, a member of the Humane Society for the Hundred of Salford, presented an address to Addy and the gold medal of the Society. The bronze and silver medals had previously been awarded to him. But a greater honour was in store for Addy, for on January 14 another large gathering was held in Salford Town Hall, the Mayor, Mr. Alderman Robinson, presiding, when the Albert medal of the first class, which had been awarded by Her Majesty the Queen, was publicly presented. The following autograph letter from the late Earl of Beaconsfield was received by Addy in connection with this award :

10 Downing Street, Whitehall,
6th November, 1878.

Sir,—The attention of the Sovereign having been called to the repeated acts of heroism performed by you in saving at the risk of your own life those of many of her Majesty's subjects from drowning in the river Irwell, I have the gratification to inform you that the Queen has been graciously pleased to confer on you, in recognition of your gallantry and daring, the honour and distinction of the Albert medal of the first class. I have, accordingly, instructed the Secretary of State to take the necessary steps to give effect to her Majesty's commands.—I have the honour to be your obedient servant,

BEACONSFIELD.

After this much-coveted decoration had been presented to him, Addy modestly expressed his thanks for the honour which

had been done him in making known to the Queen his efforts to save life.

Addy's end was hastened by the rescue of a lad from the Irwell at a point where sewer and other noxious gases make the water exceedingly filthy, and on his death-bed he said, 'Yes, it is true I have saved many lives, but the best work I ever did was saving that little lad on Whit Monday. I think more about that than all the rest. To see the joy of his brother and sister when I brought him out, to feel their grip round my legs, and hear them thank me a hundred times, was more to me than all else besides; it was better than the big meeting, and the purse of gold given at the town hall.' He died June 9, 1890, from consumption. In his early days he distinguished himself as an oarsman, and, in addition to various successes at regattas, won a number of important matches, beating David Coombes over the Thames Championship course for 200*l.*, and Ted May over the same course for 100*l.* He was the head of what was known as the 'Colleen Bawn Crew.' This crew received its name from the fact that the then proprietor of the old Queen's Theatre, Manchester, gave a valuable prize to be rowed for on the Irwell, one of the conditions being that the winning crew should afterwards be known as the 'Colleen Bawn,' the piece which was then being played at the theatre. Addy saved over fifty lives during his career, some of the rescues being effected under circumstances of great difficulty and danger, and his fellow-townsmen fittingly erected a handsome monument to his memory. The obelisk is placed over the grave of the veteran in the Catholic burial-ground at Salford Cemetery. In addition, the Memorial Committee were enabled, owing to the large number of subscriptions received, to present a life-size bust oil painting of the hero to the Peel Park Picture Gallery, and the medals which had been awarded him were given by the family to the museum of the same institution, which appropriately stands on the banks of the Irwell, not far from the scene of his many gallant rescues.

Captain W. D. Andrews was born in the city of Kingston,

Ontario, Canada, on May 19, 1853. His exploits in saving life date from the year 1869. When only sixteen years of age he rescued a lad who, while playing on a raft of timber opposite Kingston, accidentally fell into the bay. Andrews, on hearing the cry, rushed out from an office in which he was engaged, plunged in with all his clothes on and brought the boy, who had already sunk twice, safely to land. Andrews afterwards engaged in the steamboat service, and, on the morning of April 22, 1873, while the mail steamer 'Wanburo,' of which he was an officer, was lying at her moorings on the west side of the Sydenham river, opposite the city of Owen Sound, he rescued an old man who attempted to cross the river upon some floating timber and fell in when about mid-stream. Andrews leapt into the water in full uniform, took the man to shore, and then, finding his clothes stiffening with the frost, he plunged again into the water and swam back to his steamer. After some years of useful life-saving work at Toronto, to which town he removed in 1874, Captain Andrews was appointed instructor at the Wiman's Island Swimming Bath. This, the first public bath in Toronto, was presented to the city by Mr. Erastus Wiman in 1882. Within three days of his appointment the new instructor, in company with a young man named McBean, was instrumental in saving the lives of six young ladies who were in imminent peril of drowning from the filling of their boat. In September of the same year he gained the Royal Humane Society's bronze clasp and certificate of honour for a rescue accomplished in Toronto Bay. The bronze medal had previously been awarded him for rescuing two young men near Hanlan's Point in 1881. Further instances of the noble services of Captain Andrews have been from time to time recorded, but the latter portion of his active career has more to do with lifeboat work than with actual swimming. It is sad that this brave man should have lost his sight through exposure to weather and water whilst a member of different life-saving services. While in Toronto General Hospital in 1888 he wrote a little book called 'Swimming and Life-Saving,' an admirable exposition of the art. He is also the author of 'The Lifeboat'

and other poems, as well as the founder and first president of the Dolphin Swimming Club, Toronto. He was recommended for the Albert medal by H.R.H. the Duke of Connaught, and was presented by His Majesty Kalakaua I., King of Hawaii, with the gold medal of the Royal Order of Kapiolani of the first class, in recognition of his valuable services in the cause of humanity.

Another hero, who lost his eyesight through exposure, was James Lambert, of Glasgow. In the 'Glasgow Times' of October 2, 1856, Mr. Charles Reade, the well-known novelist, read an account of a drowning accident in the Clyde. An old blind man would have dived in but was prevented by his granddaughter, who clung to his knees and begged of him to desist. The poor old man went home sobbing and crying out, 'It was a laddie flung away—clean flung away!' Mr. Reade was so affected by this incident that he at once endeavoured to discover the blind hero, and after some difficulty found him in a wretched lodging in a suburb of Glasgow. The result of Mr. Reade's interview with Lambert was the publication of an account of the blind man's life under the title of 'A Hero and Martyr,' with the view of raising a fund for his relief. At the time the only income the poor fellow had was 3*s.* 6*d.* a week from the parish, and his only public recognition the right to cross a suspension bridge free of the ordinary halfpenny toll. Mr. Reade gained an annuity for Lambert, but the old man did not live long enough to participate in the benefits which the novelist's powerful advocacy had, at the last moment of his brave earnest life, secured for him. The following incident in Lambert's career is quoted from Mr. Reade's interview with the blind man:

> I come now [says Mr. Reade] to the crowning feat of this philanthropic and adventurous life, and I doubt my power to describe it. I halt before it like one that feels weak and a mountain to climb; for such a feat, I believe, was never before done in the water by mortal man, nor never will again while earth shall last.
>
> James Lambert worked in Somerville's mill. Like most of

the hands, he must cross the water to get home. For that purpose a small ferry-boat was provided; it lay at a little quay near the mill. One Andrew had charge of it ashore, and used to shove it off with a lever and receive it on its return. He often let more people go into it than Lambert thought safe, and Lambert has remonstrated and had even said, 'Ye'll hae an accident some day that ye'll rue but ance, and that will be a' your life.' Andrew, in reply to him, told him to mind his own business.

Well, one evening James Lambert wanted to get away in the first boatload. . . . Full a dozen got into the boat before him. He told Andrew to put off, but Andrew would not till the boat should be full, and soon it was crammed. James Lambert then said it was a shame of him to let so many on board. This angered the man, and when the boat was so crowded that her gunwale was not far above water, he shoved her violently off into the tideway, and said words which, if he had not prayed to God to forgive them in this world, will perhaps hang heavy round his neck in the next. '—— ye beggars,' he cried.

This rough launching made the overladen boat wobble. The women got frightened, and, before the boat had gone twenty yards, she upset in dark icy water, ten feet deep. It was night.

'Before the boat coupit athegither they a' flew to me that could, for they a' kenned me. I' the water, them that hadna a hand o' me had a hand o' them that had a hand o' me, and they carried me doon like leed.

'Sirr, when ye've twa feet i' the grave your mind warks hard. I didna struggle, for it was nae mair use than to wrastle wi' a kirk. I just strauchtened myself oot like a corp, and let them tak' me doon to the bottom of the Clyde, and there I stude upright and waited, for I kenned the puir souls would droon afore me, and I saw just ae wee-wee chance to save them yet. Ye shall understond, sirr, that when folk are drooning, they dinna settle doon till the water fills their lungs and drives the air oot. At first they waver up and doon at sairtain intervals. Aweel, sirr, I waited for that, on the grund. I was the only ane grunded, you'll obsairve. A slight upward movement commenced. I took advantage, and gied a vi'lent spang wi' my feet against the bottom, and wi' me choosing my time, up we a' came. My arms were grippit; but I could strike oot wi' my feet, and before ever we reached the surface, I lashed oot like a deevil for the quay. Aweel, sirr, wi' all I could do, we didna wend abune a yard, or maybe a yard and a hauf, and doon they carried me like leed. I strauchtened myself as we

sank, and I grunded. The lave were a' roond me like a fox. I bides my time, maur slanting towards the quay. That helpit us, and in a dozen vi'lent strokes we maybe gained twa yards this time. Then doon like leed. Plays the same game again, up, and doon again. And noo, sirr, there was something that turned sair against us; but then there was something for us, to bollance it. It was against us that they had swallowed their pint o' water by this time, and were nae sae buoyant; it was for us that the water was shallower noo, maybe not more than twa feet ower head. This wad droon us as well as twanty, but wi' nae mair nor twa feet water abuve us I could spring up fra the grun by mere force; for the grun gies ye an awfu' poower for a foot or twa. Sae noo I'm nae suner doon than up again, and still creeping for the quay, and the water aye a wee bit shallower. The next news is, I get sair spent, and that was bad; but to bollance that, some folk on the quay gat rapes and boat-hooks and pickit off ane or twa that was the nearest; and now ilka time I cam' up they pickit ane off, and that lightened my burden, and bymby I drave a couple into shallow water mysel' wi' my feet. When I was in seven fut water mysel', and fewer folk hauding me doon, I got to be maister, and shovit ane, and pu'd anither in, till we landed the whole saxteen or seventeen. But my work was na' done, for I kenned there were mair in the river. I saw the last o' my ain band safe, and then oot into the Clyde, wherever I heerd cries, and sune I fund twa lasses skirling, takes 'em by their lang hair, and tows them to the quay in a minute. Just as I'm landing thir twa, I hear a cry in the vara middle of the river, and in I splash. It was a strapping lass. "C'way, ye lang daftie," says I, and begins to tow her. Lo an' behold, I'm grippit wi' a man under the water. It was her lad; pairts these twa lovers—for their gude—and taks em' ashore, one in each hand. Aweel, sirr, I saved just ane mair, and then I plunged in and sairched, but there was nae mair to be seen noo; three puir lassies were drooned, but I didna ken that at the time. And noo I'll tell ye a farce. I'm seized wi' a faintness, and maks for the shore, But I gat weaker and dazed-like, and the lights o' Glasgee begin to flecker afore my een, and, thinks I, "I'll no see ye again, I'm done this time." It was all I could do for the bare life, to drift to the hinder part of the quay. I hadna the power to draw mysel' oot. I just grippit the quay and sobbit. The folk were a' busy wi' them I had saved; nane o' them noticed me, and I would ha' been drooned that nicht; but wha d'ye think saved

me, that had saved sae many?—An auld decrepit man : haw ! haw ! haw ! He had a hookit stick, and gied me a' the handle, and towed me along the quay into shallow water, and I gat oot wi' his help, and swooned deed away. I'm tauld I lay there negleckit awhile, but they fand me at last, and then I had fifty nurses for ane.'

One whose merits should not be overlooked in records of life-saving is Mr. Frank Shooter, Exeter, who for twenty-one years has been superintendent of the Exeter Head Weir Bathing Ground, a rendezvous for swimmers in the River Exe, sustained by the city council. Were we to sift the country throughout it would be difficult to find another man whose success has been so complete in the work of rescue from drowning. During the term of his office it is his boast that not a single person has been drowned in the vicinity of Head Weir when he has been in attendance, and it is said that those who should be thankful to him for the preservation of their lives number over three hundred. Mr. Shooter has never made himself acquainted with any acknowledged systems of rescue or resuscitation ; his achievements have been due to nothing but his exceeding coolness, physical strength, and prowess in the water. Perhaps the most notable of his rescues was that which occurred some years since. Some four or five youths had gone up the river in canoes, notwithstanding his caution that a heavy rain the previous evening would occasion the flooding of the Exe, a prediction which came true, for the paddlers were forced to beat a retreat after an absence of a few hours. The water had risen considerably beyond its normal height, and the current was very swift. On their return past the bathing-place, Shooter entered his punt with the intention of assisting them over the Head Weir, a few hundred yards further down. Parallel with the weir are the fenders and entrance to a dangerous mill leat, which runs underground for quite 180 yards. One of the canoes contained a young fellow named Hartnoll (son of a prominent medical man in the city), who, after his comrades had shot over the weir safely, became nervous and excited, and stood up in the canoe, which immediately capsized, throwing its occupant

into the water. There was a tremendous current towards the leat, beneath which Hartnoll was drawn and washed into the tunnel, much to the dismay of those who watched the occurrence from the banks, in whose minds doubtless dwelt the memory of many a fatality at the same spot. Shooter, however, with characteristic presence of mind steered his punt to the fenders, under which he dived and was lost to view in the terrible tunnel. It was known to all around that many dangers would have to be overcome by the fearless rescuer in making his way through, especially when burdened with an unconscious body, on account of the jagged rocks which along the whole distance jut out into the darkness. For the safety of both anxiety was intense among those who watched at the other end of the tunnel, and when after an absence of a few minutes, which seemed hours, the now exhausted superintendent emerged with the unconscious Hartnoll clutching him round the neck, a storm of cheers went up from the crowd. Restoratives were soon successfully used. After entering the tunnel Shooter found the young man hanging to a projecting rock, from which he lifted him with extreme difficulty, and the task of keeping the youth under control in the darkness for the remainder of the journey cannot be easily imagined. It is gratifying to remember that the daring deed met with recognition from the citizens, who, by public subscriptions, presented Shooter with a gold medal engraved with the city arms, valued at thirty guineas, together with a purse containing 135*l.* He was also awarded the silver medal of the Royal Humane Society. He had previously been the recipient of the Society's bronze medal with four clasps besides nine other medals, all of which were in recognition of similar brave deeds, tributes which were well deserved.

Another act of bravery, which will ever be green in the memories of Exonians, was the gallant rescue two years since of two children in the Exeter canal, by an unassuming young fellow named Stone—then a student at the Exeter Training College. In this case the children had been left in a baker's trap

on the banks of the canal, into which the horse backed and sank with the trap and children. Stone was walking along the bank, dived into the water, took each child from the trap in succession, and brought both safely to the surface. For this he was publicly presented with a medal from the Exeter Swimming Club, and we believe a vellum from the Humane Society.

It should be a matter for congratulation by Englishmen that the records of our own Royal Humane Society teem with instances of gallant deeds accomplished in the midst of extraordinary difficulties. We are utterly unable to deal with this subject fully, for volume after volume could be filled with the exploits of those who have gained the proud honour of being entitled to wear the coveted medal. But from the list we extract a few which we think will specially appeal to swimmers. The name of Captain Webb is a household one, more on account of his great Channel swim, and his sad death in the Niagara Rapids, than his gallant attempt to rescue a drowning man who had fallen overboard in mid-Atlantic. Mr. Robert Watson, who contributed 'A Reminiscence of Captain Webb' to the 'Swimming Notes and Record' of 1884, says of this feat :

> Remembering vividly his fate, and knowing how happily he lived throughout his tempestuous roving career on the broad Atlantic, and in many lands, I have scores of times thought whether it would not have been even better for poor Webb if the mighty waves had engulfed him when he plunged from the 'Russia' in his courageous attempt to effect what, despite his Channel swim, was the noblest work of his whole life.

At the centenary dinner of the Royal Humane Society in 1874, at which H.R.H. the Duke of Edinburgh presided, the first Stanhope Medal was awarded, the recipient being 'Captain' Matthew Webb. His Royal Highness, in making the presentation, said :

> I have great pleasure in announcing to you that the recipient is here present, standing next to me (cheers). This fine fellow will

be the first recipient of this medal, which is to commemorate an officer who was himself a very gallant medal holder of this Society, and I cannot do better than read to you the particulars of the act of bravery for which he not only receives the first Stanhope gold medal, but also one of the ordinary silver medals of the Society, of which about eight per annum are given to the most meritorious cases:—'On the 22nd of April, 1873, as the steamship "Russia" was proceeding on her voyage from New York to Liverpool, with a stiff breeze blowing and the ship cutting through the water at the rate of fourteen and a half knots an hour, a seaman named Michael Heines, who was up in the rigging in performance of his duty, fell overboard. Immediately on this being perceived, a shipmate, named Matthew Webb, jumped overboard and swam to the place where the poor fellow had disappeared. He was too late, however, to recover him, seeing nothing but the man's cap, which he brought on board. The steamer was stopped, a boat was lowered and sent to the rescue, and after cruising about for half an hour, returned to the ship with Webb, who was found swimming nearly a mile astern of the ship, not at all exhausted, though suffering somewhat from the cold.' I am sure it will afford you all great gratification, as it certainly does me, to see so gallant a man receive these two distinctions for his brave conduct. (Cheers.) I have the greatest pleasure, Webb (His Royal Highness, as he presented the medals, shook him warmly by the hand), at being the medium of placing them in your possession.

The following cases have been selected from the long list of gallant deeds which have from time to time been registered by the Royal Humane Society.

On September 10, 1874, at 9.30 P.M., at Lowestoft, James Dorling fell overboard from the yacht 'Dart,' while she was making for the inner harbour in a strong half-flood tideway. The night was very dark, and it was blowing and raining hard. Lieutenant J. de Hoghton, 10th Foot, jumped overboard, swam to Dorling, and supported him in the water for about a quarter of an hour in the tideway between narrow high pilework, without cross beams or side chains to lay hold of, the head of the pilework being twelve or fifteen feet above the water. The yacht was carried away into the inner harbour, and no other vessel or boat was in the gateway to render assistance. The darkness

prevented immediate help from the shore, but eventually both rescuer and rescued were drawn up the pilework by ropes from the shore. The gateway is about 350 yards long, fifteen to twenty yards wide, and nearly fifteen feet deep.

On November 26, 1874, a seaman fell overboard from the cross-jack or mizen-topsail yardarm of H.M.S. 'Raleigh,' and Sub-lieutenant Rogers gallantly jumped after him, but the man in his fall must have struck the side of the ship, for he immediately sank. A boat was lowered and went to his assistance, but on approaching Mr. Rogers he cried out that there was a cap floating, and ordered the boat to the place to search for the man. Unhappily no one could be seen, and the boat returned to Mr. Rogers, who had been swimming about and waiting his time to be picked up.

Mr. George W. Bennett, a landowner at Henbury, near Avoca, Tasmania, on Monday, August 16, 1875, saved three persons from drowning in the South Esk River, then flooded and running some feet over a bridge which three persons attempted to cross in a gig. They were soon in peril, and Mr. Bennett seeing this at once plunged into the river, swam seventy yards to the spot, and brought them safely to shore one at a time. From the extreme coldness of the water, it being winter-time, he was completely exhausted and benumbed, so that with great difficulty he reached a house, some two miles distant.

In the year 1879 the body of a native woman was being taken to a ghât on the Ganges for cremation, but showing symptoms of returning animation, the natives threw her into the river, being under the impression that she was possessed with an evil spirit. Mr. B. K. C. Chuckerbutty, a native of Calcutta, hearing the cry of 'Bhutt Bhutt' (goblin), ran to the spot, and not being able to obtain assistance from a concourse of affrighted natives, promptly plunged into the water and swam out to the assistance of the woman. The place was a dangerous whirlpool, twenty-five feet deep. On effecting the rescue he ran very great risks, not only from the well-known eddies of the

A BOAT ACCIDENT—RESCUED.

Hooghly, but from becoming entangled and having his hands violently clutched by the drowning woman.

Several gentlemen were proceeding by country boat from Moonshegunge to Silchar when the boat struck on a rock in the centre of the river. The gentlemen succeeded in landing safely, but the boat had to be abandoned. Immediately afterwards a large native boat with coolies on board struck the hidden rocks at the same place and all the crew were immersed. Lieutenant-Colonel (then Major) H. W. J. Senior, Indian Staff Corps, immediately swam out and succeeded in rescuing six persons, but not until he had repeatedly swum to and from the bank. He encountered great personal risk in venturing into the midst of twenty-five terrified men and women, most of them totally unable to help themselves. The Barock is a large and fast-running stream, and, like most Indian rivers, abounds in under-currents.

Constable John Jenkins, who was on duty on Waterloo Bridge on July 14, 1885, at 2.45 A.M., saw a man mount the parapet of the bridge and throw himself into the river. Without hesitation the constable unfastened his belt and jumped after him, and, notwithstanding a determined resistance on the part of the would-be suicide, succeeded in seizing and supporting him, until both were picked up some distance down the river by a boat sent from the Thames police station.

The danger in this case may be estimated when it is said that the height jumped was forty-three feet, and the tide was running at the rate of six miles an hour. A thick mist also covered the river.

On January 28, 1883, whilst H.M. schooner 'Harrier' was anchored in Pomony Harbour, Johanna Island, William Pond, one of the seamen, fell overboard. The night was very dark, and the force of the wind so strong as to render the splash almost inaudible to those on board; but William Simpson, captain of the foretop, on looking over the side heard a gurgling sound, and surmising that a man had fallen overboard, at once plunged in, found the man, and supported him in the water for some time, until hauled on board.

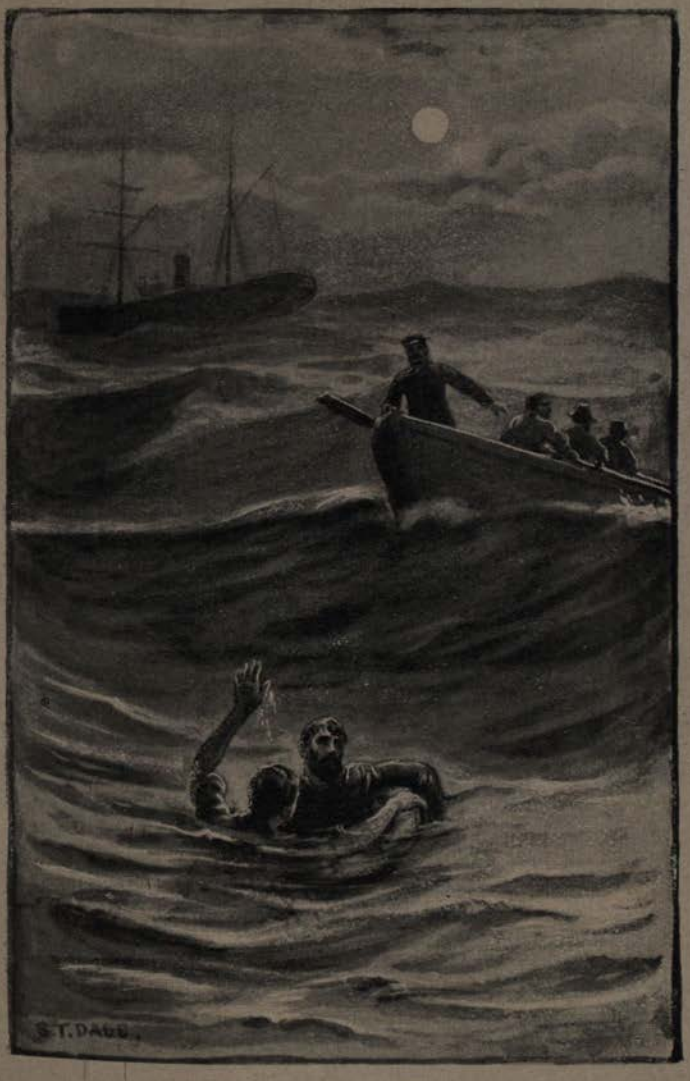
The danger incurred appears to have been very great, as the coast abounds with sharks, a large one having been seen alongside of the ship the previous day. In addition to the Stanhope medal, a silver one was also awarded for this gallant act.

Whilst the s.s. 'Rewa' was proceeding through the Gulf of Aden on September 13, 1883, a lascar who could not swim fell overboard. Mr. Walter Cleverley, who was one of the passengers, promptly plunged into the water from the top of the poop, a height of thirty feet, and swam to the man, whom he assisted to a life-buoy which had been previously thrown overboard. At the time the vessel was going at the rate of fourteen and a half knots an hour; the danger incurred was extreme, as the sea thereabouts is infested with sharks. Mr. Cleverley was forty minutes in the water before a boat could reach him, and both were got safely on board. For this brave act he had the honour of receiving the Royal Humane Society's Stanhope medal. He was a member of the Portsmouth Swimming Club.

On the night of December 16, 1884, a boy named Hoskings fell overboard the fishing lugger 'Water Nymph,' of Looe, seven miles east-south-east of the Eddystone. The captain, Alfred Collins, immediately jumped to the rescue, carrying the end of a rope with him; he was clothed in oilskins and boots. After a great deal of difficulty Hoskings was reached and pulled on board. At the time there was a gale of wind blowing with heavy rain, and the night was very dark.

For this act Collins received the silver medal of the Royal Humane Society, and later the Stanhope medal.

The Soar at Leicester being frozen, a girl named Annie Fuer attempted to cross it on the ice, when she broke through and became immersed in fourteen feet of water. A man went out part of the way to the girl's assistance, but returned, failing in his attempt to reach her, whereupon Albert Battison, aged 17, a boy of H.M.S. 'Impregnable,' went to the spot and actually dived through the opening under the ice and got hold of the girl. In coming up he had to break through the ice with his head, and



MAN OVERBOARD—A RESCUE AT SEA.

eventually succeeded in bringing the girl to the shore in safety. The officer in command of the boy's ship states that he cannot imagine a greater act of bravery than diving under the ice for a drowning person. If the lad had been unable to break the ice, he would in all probability have been drowned. For this act of gallantry he was awarded the Stanhope gold medal for 1887 by the Royal Humane Society.

On April 8, 1890, whilst the P. and O. steamship 'Massilia' was proceeding from Bombay to London, a lascar fell overboard in the Gulf of Aden. The ship was going at the rate of thirteen knots an hour. Mr. Alfred John Cooper, fourth officer of the vessel, who was in the saloon at the time, on hearing the cry of 'Man overboard!' rushed on deck and jumped into the sea, swam after the man, seized hold of him and kept him afloat until a boat was lowered and went to his assistance. This officer encountered serious risk, as he was encumbered with clothes and the native clung to him in the water. The Gulf is known to be infested with sharks about the place where the rescue occurred.

On December 15, 1890, the Indian marine survey ship 'Investigator' was trawling in 1,800 fathoms of water in the middle of the Bay of Bengal. Whilst engaged in the operation the men observed two sharks swimming round the ship, and on lowering a baited hook they succeeded shortly afterwards in hooking one of them. The shark, however, dashed forward and fouled the trawl-rope by swimming round it. Mr. Peterson, the gunner, thereupon fetched a rifle with the intention of shooting it, but while getting over the head-rails he fell overboard. Mr. W. B. Huddleston, the officer on the forecastle, being aware that the gunner could not swim, immediately jumped overboard to his assistance, and the two were afterwards got on board without hurt. The personal risk incurred in this act is apparent from the following circumstances. One shark, seven feet long, was a captive, dashing round and round under the ship's bows, while a second was in attendance, free, no great distance off. The shark-line might have been at a moment's

notice entwined around the seamen's bodies in addition to the usual risk incurred in entering the water in the presence of sharks.

On the occasion of the wreck of the 'Utopia' on March 17, 1891, in Gibraltar Bay, William Seed, chief officer of police at Gibraltar, and Corporal William McQue, 2nd Battalion King's Royal Rifles, were on duty on the breakwater, a low line of very rough rocks, on which foothold even under ordinary circumstances is always difficult. It was blowing a gale, and there was a heavy sea and strong current. The two men made out a launch with men on board being rapidly driven to shore, and, knowing that in all probability the boat would be dashed to pieces in a few minutes unless assistance were rendered, they gallantly dashed into the sea, swam out some eighty yards with a rope, and were able to save the apparently doomed seamen. The night was intensely dark, and the men ran great risk of being dashed against the breakwater. Two other gallant fellows received the Society's silver medal for equally plucky deeds on the occasion of the same terrible wreck. They were able seamen on the Swedish war frigate 'Freija,' by name Bjorkander and Werner. In the midst of the gale they jumped overboard from their own ship and rendered assistance to several drowning persons. Bjorkander was especially mentioned for his heroic exertions. The distance from shore was half a mile, and both men had to swim back to their ship, about 200 yards off. Prince Oscar Carl Auguste Bernadotte, Royal Swedish Navy, sub-lieutenants G. Bergman and A. Bergin, together with thirty-six men of H.S.M. corvette 'Freija,' all received testimonials on vellum for their exertions on this terrible night, whilst a number of Englishmen belonging to the Port Department, the yacht 'Resolute,' the cable-ship 'Amber,' &c., were awarded either bronze medals or testimonials. To Cavendish Boyle, Colonial Secretary at Gibraltar, and Robert Greey, commander, cable-ship 'Amber,' were awarded testimonials for their excellent organisation and presence of mind on the occasion.

BRINGING A ROPE TO SHORE FROM THE WRECK.

The Russian steamer 'Ichihatchoff' was wrecked on the rocks of Jaffa on February 18, 1891. More than twenty passengers had been swept away before anything was done to save life. At 6.30 A.M. on February 19, Suleiman Girby, chief boatman to Messrs. Thomas Cook and Son at Jaffa, and his brothers launched a boat and proceeded to the vessel, whence they brought off a number of the passengers and landed them. In making a second attempt their boat was smashed against the inner reef, and it was found impossible to launch another. Girby then swam backwards and forwards to the vessel fifteen times, bringing someone with him to shore each time. For this he received the silver medal of the Royal Humane Society. The same brave fellow gained the silver clasp a couple of months later. At 8 P.M. on April 26 the French frigate 'Leignelay' parted anchors and was carried on to the rocks at Jaffa. It was blowing a heavy gale at the time, and none of the natives excepting Girby would offer the slightest assistance. Girby volunteered to swim to the ship and deliver a letter to the captain from the Governor. The ship was half a mile from shore, but he accomplished the work after a two hours' swim in a heavy sea. After doing this he dived under the ship and examined the hull, reporting her sound. He then swam ashore, taking a message from the captain. Towards morning, when the sea got higher, the captain signalled and Suleiman again swam out and brought back the captain's wife fastened on his back.

In December 1867 the French ship 'Nouveau Caboteur' was cast ashore in the Bay of Zurriola, on the north coast of Spain, during a gale of wind; the sea at the time was running so heavily that no boat could put off. Mr. March, the British vice-consul at San Sebastian, who was subsequently awarded the Royal Humane Society and the Albert medals for his services, after unsuccessfully entreating some of the bystanders to accompany him, plunged into the sea, swam to the vessel and brought a rope from it to land. The rope was then secured and one of the crew came ashore safely. The second, a lad, lost his hold

and dropped into the sea. Mr. March, though half dead with cold, again swam out, and, after diving under the vessel, found the boy and brought him to shore. The remainder of the crew reached land safely. For some time after this wreck Mr. March was very ill, owing to the exposure at such a cold period of the year, but fortunately recovered.

At 9 A.M. on October 4, 1890, the ordnance boat 'Lady Alice,' under the charge of Sergeant J. H. Dray, 1st Battalion of the 'Buffs,' arrived at Garden Reach, Calcutta, with ammunition for the s.s. 'Pandua.' Sergeant Dray, after delivering his shipment, attempted to step from one vessel to the other, and fell into the river. Captain Ovens, a saloon passenger of the 'Pandua,' seeing that the man was drowning, at once jumped overboard and made a plucky attempt to rescue him, but without success. A very strong current was running, which carried the gallant officer a long distance down stream, and over an hour elapsed before he was brought on board in an exhausted condition, having been picked up by the magazine boat.

In November 1890 the ship 'Pembrokeshire' grounded on a sandbank in the China Sea, about forty miles from Hong Kong. All efforts to get her off were futile. A fierce gale of wind was blowing with a very high sea. One of the seamen, in securing a boat, was swept overboard. A life-buoy was thrown to him, which he managed to reach, but the rope afterwards thrown he failed to catch. Seeing this, Mr. G. C. Cundy at once fastened a line around his waist and leapt overboard. After a gallant fight against the waves he managed to secure the man, and both were hauled on board.

About 11 P.M. on March 1, 1891, the fishing-boat 'Lady Mathieson' during a gale of wind was driven on the rocks off Scarfskerry, Caithness. Owing to the heavy sea, two of the three men in the boat were unable to land. James Smith, a fisherman, procured a rope, and, leaving one end with the other fishermen in the boat, swam ashore. In attempting to fasten the rope round himself one of the men in the boat was washed

off, but Smith no sooner heard his cries than he turned back and landed him safely. He then swam out to the boat a second time, and finding the remaining man unable to get ashore, he secured himself and the man to the rope, when the first fisherman saved hauled them both to the shore.

On September 9, 1891, about noon, a rescue from drowning was effected at Bonnyglen, county Donegal, under great difficulties and at much personal risk to the rescuer. At the point of the river where the accident took place there is a small ferry boat, attached by a chain to a rope stretching across from bank to bank. The river, which is usually six or eight feet deep, had risen to sixteen feet; the rope consequently, instead of being overhead, was on a level with the rushing current. A man, named McGroarty, in attempting to cross, capsized the boat, which at once filled and sank as far as the attached chain would allow it. Being unable to swim, he was left bobbing about in the water, holding the chain and unable to regain his hold on the rope. A considerable crowd collected, but no one attempted a rescue. Mr. W. H. M. Sinclair was sent for, and, grasping the situation at once, divested himself of coat, ran sixty yards up the bank, plunged in and swam down stream to the drowning man. The rope impeded his progress, but he surmounted this obstacle and called to the man to let go his hold of the chain and he would save him. Mr. Sinclair then got under the man and they both sank, but on rising to the surface he succeeded in bringing him to land, though not until they had been both carried down stream eighty yards.

At 2 P.M. on March 29, 1891, the steamship 'Rector,' of Grimsby, was returning home from a fishing voyage when she shipped a heavy sea, which washed a man named Wicks overboard. The captain immediately ran full speed astern, but owing to the high sea the vessel sheered away from the man overboard, and it was found impossible to get near enough to throw him a line. John Robert Simpson, mate of the ship, picked up a life-buoy with a line fastened on board, and jumped to the man's rescue. Finding the rope too short, he cast it off,

swam to Wicks, and placed the buoy over his head, leaving himself to the mercy of the sea, which was very heavy. A gale was blowing, and the ship was under sail as well as steam. A line, however, was at last caught by Simpson, and by this means they were eventually hauled on board. Simpson had previously obtained a bronze medal of the Royal Humane Society for another act of bravery, and for this he was awarded the silver medal. The Board of Trade silver medal was also granted.

On August 16, 1890, about 12.30 P.M., two ladies had a narrow escape from drowning whilst bathing at Tramore, county Waterford. Mr. Charles Power, who ran out from an adjacent hotel on hearing the alarm, saw a young man with a life-buoy struggling in the sea about 150 yards from shore. Farther out, and fully 250 yards from the beach, two ladies appeared to be in imminent danger, being rapidly carried out by the strong ebb tide. Mr. Power first swam to the young man, but finding that he was unable to swim, and could not dispense with the life-buoy, he turned on his back and towed the man with the life-buoy out to where the ladies were, and then with the aid of the buoy he brought the three safely to land.

On February 13, 1890, three young ladies were skating on Carron Dam, near Falkirk, when the ice broke and they all became immersed. Dr. Alexander Duncan Fraser, M.D., and Mr. Donald Lionel Fraser, engineer, after a prolonged struggle, aided by William Russell, an engine-driver, saved two of them, but the third perished, as did Mr. William Brown, M.A., who gallantly rushed to her rescue, but unfortunately the ice again gave way.

On May 6, 1890, four young men, named Harold Trewfitt Farbrother, Alexander James Farbrother, Thomas Ernest Dickson and Bernard John Dickson, were in a sailing boat off the Isle of Sheppey, when a sudden shift of wind capsized the boat. The two Farbrothers were good swimmers, and being only 200 yards from the shore could easily have saved themselves, but knowing that neither of the Dicksons could swim, each brother took a boy on his back and attempted

to swim ashore. Mr. Harold Farbrother appears to have gone down with the elder Dickson, and Mr. Alexander J. Farbrother very nearly lost his life in an unsuccessful attempt to save the younger boy. A boat, however, came and picked him up. The accident resulted in the loss of three lives, viz. H. T. Farbrother, T. E. Dickson, and B. J. Dickson.

On August 26, 1890, several gentlemen were bathing in the sea at Kilkee, county Clare. One of them, Mr. Tayleur, who had been carried out by the heavy sea, found himself unable to return, and called out for help. Captain Walter McDonnell and Mr. J. A. Rutherford swam out to his assistance, but failed to bring him to shore owing to the force of the sea, and it seemed probable that all three would lose their lives. They, however, called out for a boat, and being good swimmers kept afloat and allowed themselves to drift with the tide. Mr. Tayleur, who was much exhausted, begged the others to leave him to his fate, but neither of them would do so. A wicker canoe was launched, and three gentlemen, at great personal risk and with considerable skill, got the boat through the heavy surf, and finally rescued all three.

On December 17, 1885, about 5.30 A.M., as the 'Ennerdale' was rounding Cape Horn, an apprentice named Duncan McCullum fell from aloft into the sea, striking the rigging in his fall. Harry S. Pochin, an A.B., immediately jumped overboard after him; but McCullum sank before he could reach the boy. The water was intensely cold, and Pochin was on the point of sinking when he was assisted, and kept afloat by Mr. Whistler, first mate of the vessel, who jumped overboard to his aid. Considerable delay occurred in launching a boat from the vessel, and both men were over forty minutes in the water. A huge albatross, which had hovered about the two men preparing to attack them, had to be driven off with a boat-hook.

Lieutenant-Colonel Goodwyn, East Lancashire Regiment, was awarded the silver medal of the Royal Humane Society for having, on July 29, 1884, jumped into the Red Sea with all his

clothes on to try and save a boy who had fallen overboard from the 'Nubia.' After being twenty minutes in the water, here known to be infested with sharks, Major Goodwyn was picked up by the ship's boat without having succeeded in finding the lad.

Colonel R. C. Hart, V.C., was awarded the silver medal of the Royal Humane Society for saving the life of a Frenchman from drowning in the harbour of Boulogne-sur-Mer on July 27, 1869, he himself having received on this occasion several severe wounds on the head and face from striking, in a leap from the pier, some sunken piles or rocks. Colonel Hart received a silver clasp for having on December 15, 1884, gone to the rescue of a gunner who was in immediate danger of drowning in the Ganges Canal at Roorkee, and whose life he assisted in saving.

Colonel C. K. Chatfield, Yorkshire Light Infantry, on October 31, 1887, jumped into the Irrawaddy to the help of a corporal who had fallen overboard and was afterwards drowned. Colonel Chatfield's right hand was disabled and bandaged at the time, and he incurred great risk from the force of the current.

Captain G. S. Eyre, Indian Staff Corps, was awarded the silver medal of the Royal Humane Society for having on April 15, 1877, jumped into the river at Bhaugulpore with all his clothes on, and rescued a gentleman who had been clasped by a man while attempting to swim across the stream.

Lieutenant-General C. C. Fraser, V.C., C.B., 8th Hussars, was awarded the silver medal of the Royal Humane Society for having, on December 31, 1858, plunged into the rapid current of the River Raptee, Nepaul, and saved Major Stisted and four men of the 7th Hussars, who would otherwise have been drowned.

Lieutenant-General G. B. Milman, C.B., was awarded the gold medal of the Royal Humane Society for having, on June 25, 1858, at Mahébourg, Mauritius, swum to shore and, with two other gentlemen, returned in a 'pirogue' or small

boat and rescued five brother-officers, who had been upset from a boat on a very rough night.

Lieutenant-Colonel J. W. Smith, South Staffordshire Regiment, was awarded the silver medal of the Royal Humane Society for having, on November 27, 1884, jumped into the Nile, near Semneh, with all his clothes on, and rescued a bandsman of his regiment, who had fallen from a rock into the river from a height estimated at from sixty to eighty feet.

One Saturday afternoon, at the end of May 1892, two racing fours left Bournemouth Pier for the usual pleasure trip of a pull across to the Dorsetshire village of Studland. Off the 'Old Harry Rocks,' by Swanage, a squall had been noticed prior to the start, but this having apparently subsided, the disastrous trip began. When off Branksome Chine, and a mile and a half from the shore, the gale overtook them, and both boats made for the shore, only, however, to be swamped by the heavy seas. Then ensued a prolonged struggle for life. In one boat were two members of the Bournemouth Swimming Club, named White and Stroud. They assisted their three companions to gain a hold of the boat, and then swam to shore for assistance. All were eventually rescued, but in an exhausted condition. In the other boat, which when overturned was farther out to sea, were S. Monks, a well-known amateur swimmer, and S. Whitcher, who could also swim. For over an hour these two brave young fellows stayed by their companions. They placed oars under their arms and replaced them as the heavy seas washed them from the exhausted lads. One of them succumbed after Monks had repeatedly brought him up and dragged him on to the bottom of the boat, while for another Monks dived three times successfully, but on a fourth occasion lost sight of the poor youth. The remainder managed to keep afloat until rescued with great difficulty by a boat from the yacht 'Frederick William.'

Amongst the many deeds of heroism recorded, that of Sapper William Borland is very remarkable for the manner in which he distinguished himself in rescuing his comrades on the

occasion of the Middle Head torpedo explosion, New South Wales, on April 3, 1891. When the explosion occurred, Borland was carried to a great height in the air. On reaching the water he noticed a comrade named Adams struggling near him in a helpless condition. He at once went to his rescue, although very badly burned about the head and face and injured in the arms and legs, and in a most gallant manner supported his comrade until both were picked up. For this courageous act Borland received the Royal Humane Society's bronze medal and certificate on November 18, 1891, and on January 25, 1893, the Earl of Jersey, Governor of New South Wales, presented him with the Albert medal as a further token of appreciation of his bravery.

As an example of the benefits which may arise from teaching the principles of life-saving to children, the following typical case, which occurred a few years back, will be interesting. A Tonbridge schoolboy, named Leonard Miller, who had competed for the Royal Humane Society's swimming prize, leaped into the Medway in the middle of October and rescued another lad from drowning. Miller swam out with all his clothes on, and after diving, brought up the drowning boy to the surface.

It sometimes falls to the lot of a life-saver to require assistance himself. The Rev. C. F. Boyd, Chaplain to the Forces, Colombo, while swimming in the sea at Negombo, Ceylon, became exhausted and was unable to regain the shore; for more than a quarter of an hour he struggled against the ebb tide, and, failing in his endeavours, called out for help. Company Sergeant-Major Mitchell, Royal Engineers, swam out at great personal risk to his assistance, and supported Mr. Boyd for a considerable time. Both men in all probability would have been drowned had not a fishing-boat gone to their rescue and brought them to shore. Although Mr. Boyd was more than an average swimmer, and had on a previous occasion received the Society's medal for saving life from drowning, he stated that in this case he undoubtedly owed his life to Sergeant-Major Mitchell.

A FRIEND IN NEED.

In the year 1806 the Russian Emperor Alexander was awarded and accepted the gold medal of the Royal Humane Society for his noble and successful exertions in resuscitating a peasant, who was taken apparently lifeless from the Wilna, after his medical attendants had despaired of his recovery. It is said that His Majesty continued his efforts for over three hours, and most positively declined to desist even when an English surgeon stated that it was useless proceeding any further. The surgeon was instructed to make a fresh attempt to bleed the patient, and when at length the man groaned, His Majesty, with tears in his eyes, exclaimed in French, 'Good God! this is the brightest day of my life!' He bound the poor fellow's arm up with his handkerchief so as to stop the bleeding, remained by until he was quite recovered, and afterwards provided for him and his family.

The first recorded cases of resuscitating the apparently drowned are those mentioned in the notes to Derham's 'Physico-Theology.' They happened at Tronningholm and Oxford about the year 1650, but do not at the time appear to have excited the slightest attention from the medical fraternity. About the middle of the last century Dr. J. Fothergill addressed the following paper to the Royal Society, in which he asserted that there was a possibility of saving many lives without risking anything.

Observations on a case published in the last volume of the 'Medical Essays,' &c., of Recovering a Man, Dead in Appearance, by Distending the Lungs with Air. Printed at Edinburgh, 1744. By John Fothergill, Licent. Coll. Med. Lond. Read before the Royal Society, February 21, 1745, and printed in the 'Philosophical Transactions of the Royal Society,' vol. xliii. page 275.

There are some facts which in themselves are of so great importance to mankind, or which may lead to such useful discoveries, that it would seem to be the duty of everyone under whose notice they fall to render them as extensively public as it is possible.

The case which gives rise to the following remarks, I apprehend, is of this nature: it is an account of a man, dead in appearance, recovered by distending the lungs with air: by Mr. William Tossack, surgeon in Alloa; printed in part ii. page 605, vol. v. of the 'Medical Essays'; published by a society of gentlemen at Edinburgh; an abstract of which will be sufficient in this place. Those who desire an ampler account may consult the article itself.

A person, suffocated by the nauseous steam arising from coals set on fire in the pit, fell down as dead. He lay in the pit between half an hour and three-quarters, and was then dragged up; his eyes staring and open, his mouth gaping wide, his skin cold, not the least pulse in either heart or arteries, and not the least breathing to be observed.

In these circumstances, the surgeon, who relates the affair, applied his mouth close to the patient's, and, by blowing strongly, holding the nostrils at the same time, raised his chest fully by his breath. The surgeon immediately felt six or seven very quick beats of the heart, the thorax continued to play, and the pulse was soon after felt in the arteries. He then opened a vein in his arm, which, after giving a small jet, sent out the blood in drops only for a quarter of an hour, and then he bled freely. In the meantime, he caused him to be pulled, pushed, and rubbed as much as he could. In one hour the patient began to come to himself; within four hours he walked home, and in as many days returned to his work.

There were many hundred people, some of them of distinction, present at the time.

This is the substance of the account; from whence it naturally appears how much ought to be attributed to the sagacity of the surgeon in the recovery of this person. Anatomists, it is true, have long known that an artificial inflation of the lungs of a dead or dying animal will put the heart in motion, and continue it so for some time; yet this is the first instance I remember to have met with wherein the experiment was applied to the happy purpose of rescuing life from such imminent danger.

Bleeding has hitherto been almost the only refuge upon these occasions. If this did not succeed, the patient was given up. By bleeding it was proposed to give vent to the stagnating blood in the veins, in order to make way for that in the arteries *à tergo*, that the resistance of the heart being thus diminished, this muscle might again be put in motion.

But, in too many instances, we every day are informed that this

operation will not succeed, though the operation is made with never so much skill. Nor is it likely that it should ; when the blood has lost considerably of its fluidity, the motion of the heart and the contractile force of the solids are at an end.

Chafing, rubbing, pulling, the application of stimulants are too often as ineffectual as bleeding.

The method of distending the lungs of persons dead in appearance having been tried with such success in one instance, gives just reason to expect that it may be useful to others.

It may be a proper inquiry in what cases, and under what circumstances, there may be a prospect of applying it with success?

It will at once be granted that when the juices are corrupted ; where they are rendered unfit for circulation by diseases ; where they are exhausted ; or where the tone and texture of the solids is impaired or destroyed, it would be extreme folly to think of any expedient to recover life.

But where the solids are whole, and their tone unimpaired by diseases ; the juices not vitiated by any other cause than a short stagnation ; where there are the least remains of animal heat, it would seem wrong not to attempt so easy an experiment.

This description takes in a few diseases, but a greater number of accidents. Amongst the first are many of those which are called sudden deaths from some invisible cause ; apoplexies, fits of various kinds—as hysterics, syncopes, and many other disorders—wherein, without any obvious pre-indisposition, persons in a moment sink down and expire. In many of these cases, it might be of use to apply this method, yet without neglecting any of those other helps which are usually called in upon these melancholy occasions.

It is not easy to enumerate all the various casualties in which this method might be tried not without a prospect of success. Some of them are the following : suffocations from sulphureous damps of mines, coal-pits, &c. ; the condensed air of long-unopened wells, or other subterraneous caverns ; the noxious vapours arising from fermenting liquors received from a narrow vent ; the steam of burning charcoal ; sulphureous mineral acids ; arsenical effluvia, &c.

Perhaps those who to appearance are struck dead by lightning, or any violent agitation of the passions—as joy, fear, surprise, &c. —might frequently be recovered by this simple process of strongly blowing into the lungs, and by that means once more communicating motion to the vital organs.

Malefactors executed at the gallows would afford opportunities of discovering how far this method might be successful in relieving such as may have unhappily become their own executioners by hanging themselves. It might at least be tried, if, after the criminals have hung the usual time, inflating the lungs in the manner proposed would not sometimes bring them to life. The only ill consequence that could accrue from a discovery of this kind would be easily obviated by prolonging the present allotted time of suspension.

But this method would seem to promise very much in assisting those who have been suffocated in the water under the above-mentioned circumstances ; at least, it appears necessary to recommend a trial of it, after the body has been discharged of the water admitted into it, by placing it in a proper position, the head downwards, prone, and—if it can be—across a barrel, hogshead, or some such-like convex support, with the utmost expedition.

It does not seem absurd to compare the animal machine to a clock. Let the wheels whereof be in never such good order, the mechanism complete in every part, and wound up to the full pitch, yet, without some impulse communicated to the pendulum, the whole continues motionless.

Thus, in the accidents described, the solids are supposed to be whole and elastic, the juices in sufficient quantities, their qualities not otherwise vitiated than by a short stagnation, from the quiescence of that *moving something* which enables matter in animated bodies to overcome the resistance of the *medium* it acts in.

Inflating the lungs, and by this means communicating motion to the heart, like giving the first vibration to a pendulum, may possibly, in many cases, enable this *something* to resume the government of the fabric and actuate its organs afresh, till another unavoidable necessity puts a stop to it entirely.

It has been suggested to me by some of my acquaintances that a pair of bellows might possibly be applied with more advantage in these cases than the blast of a man's mouth. But if any person can be got to try the charitable experiment by blowing, it would seem preferable to the other ; first, as the bellows may not be at hand ; second, as the lungs of one man may bear without injury as great a force as those of another man can exert, which by the bellows cannot always be determined ; third, the warmth and moisture of the breath would be more likely to promote the circulation than the chilling air forced out of a pair of bellows.

To conclude, as I apprehend, the method above described may conduce to the saving a great many lives, as it is practicable by everyone who happens to be present at the accident, without loss of time, without expense, with little trouble, and less skill. And as it is, perhaps, the only expedient of which it can be justly said that it may possibly do *great good* but cannot do harm, I thought it so much consequence to the public as to deserve to be recommended in this manner to your notice. For though it is already published in a work which is generally read by the faculty, yet, perhaps, it may be overlooked by some, forgot by others, and, perhaps, after all the care that can be taken, it may never come to the knowledge of a tenth of those who ought not to be ignorant of it.

JOHN FOTHERGILL.

P.S. As the representation of an extraordinary fact may perhaps induce some to try the experiment, when occasions like those which are specified in the above remarks occur, it is hoped that humanity will prompt all such to favour the public with an account of their success, with the principal circumstances that attended. And as the writer of these remarks has embarked in the designs of rendering this fact diffusively known, he would be glad to have it in his power to inform the public that numerous experiments confirm what this case suggests, viz., the possibility of saving a great many lives without risking anything.

White Hart Court, Gracious Street : September, 1744.

The case upon which Dr. Fothergill founded his observations appears in vol. v. part ii. page 605 of the 'Medical Essays and Observations,' published in 1744 by the Medical, afterwards the Philosophical, Society of Edinburgh ; and as its importance in relation to the history of resuscitation is unquestionable, it is here quoted in full.

A Man, Dead in Appearance, Recovered by Distending the Lungs with Air. By Mr. William Tossack, surgeon in Alloa, a seaport town of Clackmannanshire, Scotland, thirty miles east-north-east of Edinburgh.

I must submit to better judges to determine whether the experiment I design to relate was the means of saving the man's life on whom it was tried. It is at least very simple and absolutely safe, and therefore there can at least be no harm, if there is not an advantage, in acquainting the public of it.

November 11, 1732, early in the morning, an unusual steam was observed to come out of a coal-pit in this neighbourhood, belonging to the Honourable Sir John Schaw, of Greenock, which the people who went down to enquire the cause of it found to be the smoke of coals that lay about ten fathoms from the bottom of the pit, and were some way or other set on fire in two places. This pit, and all the others which had any communication with it, were shut up close, to smother the flame, and continued thus shut till December 3, when they were all opened. The one where the fire had been sent out a most nauseous steam, so that nobody could come near it, except to the windward. After some hours the colliers and others ventured down by the ladders into this pit, which was thirty-four fathoms deep, but soon came running up, all panting and breathless; they that came latest being scarce able to speak so much as to tell that one of their number, James Blair, was left dead.

Two men who were no colliers offered soon after to go down, and others, animated by their example, accompanied them, and brought up the poor man by head, shoulders, legs, or arms; their hurry was so great they did not think how they carried him. When he came to the mouth of the pit, which was between half an hour and three-quarters after he had been left in the bottom of it, two had him by the arms, and two by the feet, with his back upmost. I made them immediately set him down at a little distance from the pit, turning him supine. The colour of the skin of his body was natural, except where it was covered with coal-dust. His eyes were staring open, and his mouth was gaping wide; his skin was cold; there was not the least pulse in either heart or arteries, and not the least breathing could be observed, so that he was in all appearance dead. I applied my mouth close to his, and blowed my breath as strong as I could, but having neglected to stop his nostrils, all the air came out at them; wherefore, taking hold of them with one hand, and holding my other on his breast at the left pap, I blew again my breath as strong as I could, raising his chest fully with it, and immediately I felt six or seven very quick beats of the heart; his thorax continued to play, and the pulse was felt soon after in the arteries. I then opened a vein in his arm, which, after giving a small jet, sent out the blood in drops only for a quarter of an hour, and then he bled freely. In the meantime I caused him to be pulled, pushed, and rubbed, to assist the motion of the blood as much as I could, washed his face and

temples with water, and rubbed sal volatile on his nose and lips. Though the lungs continued to play after I had first set them in motion, yet for more than half an hour it was only as a pair of bellows would have done—that is, he did not so much as groan, and his eyes and mouth remained both open.

After about an hour he began to yawn, and to move his eyelids, hands, and feet. I then put water, in which I had dropped some sal volatile, into his mouth, which he swallowed, and caused him to be carried into a house hard by, where I set him in a chair, reclining backward. In an hour more he came pretty well to his senses, and could take drink, but knew nothing of all that had happened after his lying down at the foot of the ladders till his awaking, as it were, in the house.

Within four hours he walked home, and in as many days returned to his work, but complained for a week or two of a violent pain in his back, which, I believe, was owing to the way of carrying him up out of the pit.

Lady Schaw, Mr. Bruce of Kennet, and the Rev. Mr. Thomas Turner, and several other gentlemen, with three or four hundred people of the neighbourhood, were witnesses to what I have now related.

These papers were disregarded by the profession, although Dr. Fothergill had previously developed many other branches of his noble calling, and it was not until some years after that the theory propounded by him found general favour. Bourquet, a Professor of Philosophy, is said to have used a system at Neuchatel, where he was in residence from 1705 until 1742, whilst John Hunter, Esq., F.R.S., who at the request of the Royal Humane Society read a paper before the Royal Society in 1776, founded his opinions on experiments which he had made in 1755. Blowing into the lungs, heat and motion were the principal recommendations. In the year 1767 M. Réaumur reported to the Academy of Sciences, at Paris, several cases in which he had been successful in Switzerland. A Society for the Recovery of the Apparently Drowned was shortly after started in Amsterdam, to instruct the common people as to the best manner of treating the apparently drowned, and to give rewards for such services ;

and almost simultaneously several kindred organisations were founded in different parts of Europe. In a work published in 1773, Mr. A. Johnson, M.D., suggested the formation of a society in England similar to that of Amsterdam. Dr. Cogan translated the memoirs of the Amsterdam society into English, for the purpose of convincing the people of this country of the practicability of resuscitating the apparently drowned, and his work accomplished its purpose, for it fell into the hands of Dr. Hawes, to whose humane and generous efforts the foundation of the Royal Humane Society is almost entirely due. As may be imagined, Dr. Hawes met with many rebuffs at the start. The theory was discredited, and the rewards had to come out of his own pocket. Finding that a strong prejudice existed against the movement, he determined to demonstrate that the theory was valuable and likely to prove, when put into practice, of inestimable benefit. With this view he publicly offered rewards to persons who, between London and Westminster Bridges, should within a certain period from the occurrence of an accident rescue drowning persons and bring them to certain places on shore, in order that resuscitation might be attempted. In this way he saved several lives, and for a whole year continued to pay the rewards out of his own pocket. His generous zeal at length brought him sympathy in his work, and in 1774, on the advice of Dr. Cogan, the formation of a Humane Society was determined upon. Thirty-two other gentlemen, chiefly friends of the two doctors, joined with them in the foundation. From a copy of the fifty-second annual report of the society, published in 1826, the following list of the founders is quoted :

Dr. Hawes
Dr. Cogan
Mr. Armiger
Rev. Mr. Bouillier
Fred Bull, Esq. and Ald.
Dr. William Cooper
Mr. Delver
Mr. Denham
Mr. W. Fox
Dr. Oliver Goldsmith
Rev. Richard Harrison
Mr. Benjamin Hawes
Dr. Heberden
Thomas Tower, Esq.
Rev. Dr. Towers
W. Towgood, Esq.

Mr. W. Townsend
Dr. Kooystra
Robert Palmer, Esq.
Mr. Patten
Mr. Michael Pearson
Mr. Phipps
Samuel Prime, Esq.
Mr. John Bewley Rich
Rev. Mr. Snowden
James Horsfall, Esq., F.R.S.
Mr. John Jacob
Mr. Joseph Jacob
Rev. Dr. Jeffries
J. C. Lettson, M.D., F.R.S.
Rev. W. Van Essen
Mr. Warrand
Dr. Watkinson
Mr. Wright

The society was instituted to collect and circulate the most approved and effectual methods for recovering the apparently drowned or dead; to suggest and provide proper apparatus for, and to bestow rewards on all who assist in, the preservation or restoration of life.

Pecuniary grants are only made in cases which occur within thirty miles of London, but the committee have power to give rewards for particular cases outside that limit. The honorary rewards are granted for saving life in any of the British possessions.

That of the highest importance is the Stanhope Gold Medal, only one of which is awarded annually, and that to the case in which the society deems the greatest gallantry has been exhibited during the year. This medal is provided for by funds placed at the disposal of the society by the committee of the Stanhope Memorial Fund, which was raised shortly after the death of Captain Chandos S. S. Stanhope, R.N., in 1871, to commemorate the services of that officer. There are silver and bronze medals for ordinary cases, as well as testimonials on vellum. These are distributed entirely at the discretion of the society, who generally cause a searching investigation to be made into each case before deciding in which class it shall be included. The front of the ordinary medal represents a boy blowing an extinguished torch, in the hope, as expressed by the motto, 'LATEAT SCINTILLVLA FORSAN'—'Peradventure a little spark may yet lie hid.' Under a device is the following inscription abbreviated, 'SOCIETAS LONDINI IN RESUSCITATIONEM INTERMORTUORUM INSTITUTA MDCCLXXIV' — 'The Society

established in London for the recovery of persons in a state of suspended animation, 1774.'

The reverse of the medal exhibits a civic wreath, which was the Roman reward for saving life; the inscription round it expresses the merit which obtains this honour from the society, 'HOC PRETIUM CIVE SERVATO TULIT'—'He has obtained this reward for having saved the life of a citizen.' Within the wreath is the following inscription abbreviated: 'VITAM OB SERVATAM DONO DEDIT SOCIETAS REGIA HUMANA' — 'The Royal Humane Society presented this gift for saving life.'

STANHOPE MEDAL

There is a second reverse to the society's medal, with the civic wreath only, which is used when the medal is presented to persons who have endeavoured to save the lives of others at the risk of their own, but without success; the inscription reads 'VITA PERICULO EXPOSITA DONO DEDIT SOCIETAS REGIA HUMANA'—'The Royal Humane Society presented this to ————, his life having been exposed to danger.'

The clasp for the silver and bronze medals is the same in shape. It is usually awarded to those who are already in possession of the medal, for a second act of bravery in saving life.

In 1882, the society added to its objects the encouragement of swimming exercises at public schools and training-ships,

with reference to saving life from drowning. Since that year a medal has been awarded annually to each of a selected number of leading schools and training-ships, for the purposes of competition.

Each competitor is allowed one trial under each of the following conditions :

First Trial.—A dummy or block of wood, to represent a body, is to be floated at some distance from the place where the competitor has to enter the water. He is to swim to it and bring it back to the starting place.

N.B.—In running water, this rule may be modified.

Second Trial.—A weighted dummy or block of wood, with rope handles, is to be sunk at some distance from the place where the competitor is to enter the water. The competitor is to swim to the spot, dive, and bring the dummy to land at a place appointed. The spot where it is sunk may be indicated by a floating cork, not to be attached to the dummy.

Third Trial.—A dummy is to be sunk in the bath or river, the place not being indicated. The competitor is to enter the water at a given point, then dive, find the dummy, and bring it to shore. The weight of the dummy is to be proportioned to the ages of the competitors.

A certain number of marks is to be awarded to every competitor in each of the above trials, the minimum of time being an important consideration.

Competitors are to be partially clothed.

In addition to this work the society has a model receiving-house in Hyde Park, with boats for use on the Serpentine when bathing is in progress, and during the skating season sends ice-men to various waters about London.

Numerous stations are furnished with life-saving apparatus, and papers respecting the best methods of resuscitation are extensively circulated.

To the founders of the Royal Humane Society belongs a distinguished honour. Their work has proved of incalculable benefit to the world at large, and may yet be multiplied to an indefinite extent.

The Royal Humane Society of Australasia, which is practically an imitation of the English society, was founded in the year 1874, and incorporated in 1885. Its formation was first suggested by Mr. John Wilks, in a letter published in the Melbourne 'Argus' of July 22, 1873. The initial meetings were held at the instance of the Hon. George S. Coppin, and finally, at a public meeting held in the Town Hall, Melbourne, under the presidency of the Mayor, Alderman J. McIlwraith, on September 28, 1874, one hundred years after the formation of the Royal Humane Society of England, the Australasian organisation was formally inaugurated as the Victorian Humane Society. Four years later the directors considered it advisable to extend the scope of the society's work so as to embrace the other colonies, and this resulted in the directors obtaining, in 1882, through his Excellency the Marquis of Normanby, then Governor of Victoria, the consent of Her Majesty the Queen to assume the present title. After that the directors gained the patronage of the leading men in all the Australasian colonies, and in 1886 the society was completely federated throughout the whole of Australia and Fiji.

In accordance with a resolution passed in 1883 the Royal Humane Society of England, although it is still prepared to receive and record information respecting acts of courage and devotion in saving life from drowning in the colonies—where humane societies, with rules and regulations, having similar objects to its own, have been founded—now remits any applications for reward to the said societies, provided they are officially recognised by the governors of their respective colonies. The applications for reward from residents in New South Wales and New Zealand are therefore passed on by the Royal Humane Society to the Australasian society. This rule does not, however, apply to officers and men of the Royal Navy or the Army on active service who, as heretofore, wherever they may be quartered or stationed, are recognised as having claims on the Royal Humane Society when they save life from drowning at the risk of their own.

The Australasian society undertakes considerably more than the English society, and its school competitions are carried out on far better lines. The rescue tests are about the same for the bronze medallion, but there is an additional examination for proficiency in the theoretical knowledge of the art of saving life from drowning, &c.; the society forwarding printed examination papers for the pupils to answer in writing the theoretical portion of the examination, which includes resuscitation.

In a recent examination paper, consisting of fourteen questions, the following related to the saving of life from drowning:

1. Describe the different steps necessary to be followed in restoring a person to life who is apparently drowned.

2. Describe Dr. Marshall Hall's method of restoring natural breathing.

3. Describe Dr. Silvester's method.

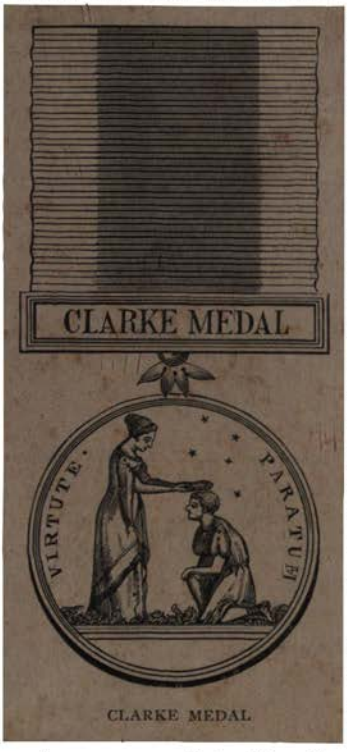
4. Explain the reason for each movement in each of the above methods.

5. Describe the safest mode of approaching, seizing hold of, and drawing to shore a drowning person.

A practical demonstration of ability in rescue and resuscitation work has also to be given. These examinations are open to all public and private schools in the Australasian colonies. In England the examination only comprises a practical exhibition in dummy rescue work, the third trial of which, as will afterwards be shown, is utterly futile, and liable to gross unfairness being practised, and, moreover, only a very small number of schools are allowed to enter.

The medal of the Royal Humane Society of Australasia is intended to express the idea of bravery rewarded. On the obverse a female figure representing Australasia is depicted, in the act of placing a wreath on the head of one whose courage and humanity have been judged worthy of such honour. The Southern Cross, which appears above, identifies the society with the Southern Hemisphere. The reverse contains a wreath of eucalyptus and laurel leaves, around which is the title of the

society, the space in the centre being left open for engraving the name of the recipient, &c. The clasp for the silver and bronze medals is the same in shape. It is usually awarded to those who are already in possession of a medal, for a second act of bravery, equal in merit to the previous act, for which a medal has been granted for saving life. A blue ribbon is attached to the ordinary medal, but to the Clarke medal, founded in 1881 by the Hon. Sir W. J. Clarke, Bart., which corresponds to the English Stanhope medal, a distinctive ribbon—red, with white stripe at either side, and special clasp—is affixed. This medal may be either of gold or silver, according to the merit of the act for which it is awarded. All the awards of this society are honorary, not pecuniary, the idea of the directors being to place all the holders of their awards on the same platform, and to form one muster-roll of brave men, irrespective of rank or colour.



CLARKE MEDAL

The New Zealanders at present depend on the society for any recognition of bravery, but strong efforts are being made to induce the Government of the colony to award the New Zealand Cross, at present bestowed for gallant conduct in the field of battle, for courageous acts in the water involving personal risk.

At a number of ports in the United Kingdom there are local Humane Societies, working on similar lines to the Royal Humane Society, but their area of operations is, as a general

rule, limited to their own immediate districts. Their formation is undoubtedly due to the example set by the parent body, although the immediate cause of their establishment has in some cases been the result of sudden distress. For instance, the foundation of the Liverpool Shipwreck and Humane Society was due to a great hurricane which swept over the Irish Channel in the early part of January, 1839. So great was the suffering owing to shipwrecks, that a public meeting was called at the Underwriters' Rooms, Liverpool, for the purpose of raising funds to meet the exigencies of the occasion and to form a permanent institution for the relief of sufferers, as well as to reward those who saved life. The sum of 5,000*l.* was subscribed in a few days, and ultimately a balance of over 3,000*l.* remained for future needs.

This society has for its objects the saving of human life, particularly in cases of shipwreck in the neighbourhood of Liverpool; the rewarding of persons instrumental in rescuing human life from danger, and the relief of the widows and orphans of those who may perish in the attempt to save others. It also relieves the immediate necessities of those saved, and assists them in getting to their destination, as well as generally granting rewards and relief in deserving cases.

In America the life-saving services are mixed up with the ordinary lifeboat services, which are in this country kept distinct, but without any apparent reason. The Massachusetts Humane Society was founded in 1785, but a few years after our own Humane Society, and received its charter in 1791. It did excellent work, and since a friendly rival—the United States Life-saving Service—came into the field has done even more. The Life-saving Benevolent Association of New York was instituted in 1849 by a number of merchants connected with the shipping trade of that city, and its sphere of usefulness has been large and varied.

The United States Life-saving Service, which was established in 1871, is said to be the greatest regular service in the world. The men are thoroughly trained for their arduous work, and

no expense is spared in obtaining for their use the best known apparatus.

Our own Royal National Lifeboat Institution, which was founded in 1824, is, however, the best volunteer service of that character, and the deeds of heroism performed by the brave fellows who man its boats will live for ever in the pages of English history.

One other decoration of importance remains to be mentioned, and that is the Albert medal, instituted by royal warrant on April 12, 1867, for gallantry in saving life at sea. The Albert medal of the first class is oval-shaped, made of gold and enamelled in dark-blue, with a monogram V and A interlaced with an anchor, and surrounded with a garter in bronze, on which is inscribed: 'For gallantry in saving life at sea.' The medal is surmounted by a crown, and attached to a dark-blue ribbon with four white stripes. The second-class medal is made entirely of bronze, the ribbon having two instead of four white stripes.

THE ALBERT MEDAL

Until the formation of the Life-saving Society in 1891, the swimming clubs of this kingdom did not pay very much attention to the most essential feature of their art, that of rescuing persons in danger of drowning by swimming to their relief. Some individual clubs, of course, made it a part of their work, but there was little practice, and although competitions were held, most of them were without much attempt at method. In the year 1887 the Royal Humane Society was approached on the subject, and asked to undertake the instruction by means of its own organisation and staff, but nothing came of the request. The Amateur Swimming Association was then requested to super-

vise the work, and it went so far as to appoint a committee, which reported as follows :

We whose names are hereto subscribed of your committee, appointed by the following resolution of the council on May 11, 1889, 'That the whole question of proposed life-saving classes and the scheme brought up to this meeting be referred to seven delegates, to draw up a report for consideration of a special council meeting called for the purpose,'—do report as follow :

That we have given our careful attention to the question, and recommend the adoption of the following scheme for the establishment of life-saving classes :

1. That a central committee of seven be appointed, four by the council of the Amateur Swimming Association, and the remaining three by the executive. The president, vice-presidents, and secretaries to be *ex-officio* members of the central committee.

2. That classes be held in different districts at such times as the central committee shall arrange ; the local arrangements to be made by the swimming clubs in the district where the class is to be held. The lecturers to be provided by the central committee. Each lecture to be complete in itself. A demonstration of the method of restoring the apparently drowned to be given during the meeting. The district clubs to arrange for the attendance of societies and schools in their neighbourhood.

3. That all demonstrations and lectures be arranged by the central committee, but that the management of each individual lecture or demonstration shall, as stated in clause 2, be in the hands of the local swimming clubs.

4. That clubs shall be requested to print life-saving rules in club books of fixtures, &c., and give demonstrations of rescue and restoration from drowning at their entertainments.

We further recommend the following arrangements for starting classes :

a. That a preliminary meeting be held at a good bath, in as central a position as possible, with a demonstration of rescue work by swimmers, and restoration of the apparently drowned by a qualified medical man, followed by a social meeting to discuss the matter.

b. That a circular embodying the above scheme be sent to all affiliated clubs.

c. That application for assistance be made to the Royal Humane Society, St. John's Ambulance Association, and the Corporation of London.

d. That the expense of the life-saving classes be met by arrangement between the promoting clubs and the central committee, and by special subscriptions, and by grants from the Amateur Swimming Association if necessary.

There the matter ended, for although this report was unanimously passed, no further action was taken.

The neglect of diving, floating, plunging and scientific swimming by ordinary clubs led, in 1891, to the calling of a meeting by seven gentlemen interested in swimming, for the purpose of founding a special club to encourage the arts named, and, in addition, to vigorously carry out by instruction, &c., the recommendations of the Amateur Swimming Association as to the saving of life from drowning. The first meeting was held on January 3, 1891, at Anderton's Hotel, London, and was attended by about sixty persons. A committee was appointed to draw up rules, and on February 7, 1891, a general meeting was held, at which it was resolved to term the society the Swimmer's Life-saving Society, and to make the teaching of the principles of life-saving its chief work. The name was afterwards changed to that of the Life-saving Society. On May 25, 1891, the first lecture on behalf of the society was delivered at the Polytechnic Institute, London, by Mr. Andrew Clark, F.R.C.S., and this lecture was followed by numerous demonstrations at club entertainments. Very great difficulty arose from the fact that the teaching could not be carried out systematically or uniformly. The instructions issued by the Royal Humane Society were used for resuscitation practice, but the methods of rescue had to be made the subject of experiment. With the exception of a few meagre reports there was nothing to work on, and the methods of teaching by those clubs that were known to take an interest in the subject were crude. It therefore devolved upon the society first of all to perfect its organisation, and then, when in touch with the clubs, to formulate a scheme whereby such important instruction as that of the principles of life-saving could be regularly given, not only in swimming clubs, but also in schools and other educational institutions.

The executive held many meetings in 1891, but the suggestions made at them were nearly all found to be impracticable, or else the system of teaching was too complicated to be easily intelligible. It was felt that, apart from the mere work of teaching, the displays should in some form or other be made attractive to the ordinary public, so that when one was given they should attentively watch every movement. Eventually it was decided to endeavour to frame a simple drill which could be quickly learnt by swimmers, and a committee was appointed for that purpose. The Army 'Drill Book,' the 'Manual' of the Medical Staff Corps, and Lieutenant Torkington's 'Swimming Drill,' were taken as the guides for the work, but the MS. report had hardly been drafted when the 'North British Daily Mail' published a number of illustrated articles explaining a method of drill of a similar kind to that which had been prepared by the committee. This drill was the compilation of Mr. William Wilson, of Glasgow. It had been practised in Glasgow for a year previously, and the compiler had himself given prizes for proficiency, the South Side Swimming Club teams being the successful competitors.

From this it is evident that about this time there was a general idea among the more thoughtful to raise swimming above the mere level of a competitive sport, and to make its practice of use and benefit to the nation at large. It had hitherto been imagined that the holding of races was sufficient to encourage the art, and that a man who could swim was naturally able to save life. That this idea was erroneous has been abundantly proved, inasmuch as many speed swimmers have found that in life-saving practice their knowledge availed them very little; indeed, in many cases they have actually failed to carry a passive subject in the water. Those who doubted this were soon convinced when they came to make actual trials, and were bound to admit that the fast methods of propulsion were not of much service when bringing a man to shore. To this may probably be attributed the desire for the foundation of some authoritative body for the promotion of those swimming arts which would be useful in saving life.

Shortly after the appearance of the articles dealing with Mr. Wilson's system of drill, the author forwarded a copy to the society. In the main it was the same as that drawn up by the sub-committee previously referred to, but not having had experience in the teaching of rescue methods their system was lacking in some respects. Finally, Mr. Wilson kindly offered the drill to the society, and it was printed and circulated in the form of a handbook, after examination by Dr. W. Collingridge, the Medical Officer of Health for the Port of London, and Mr. Andrew Clark, F.R.C.S., who, although not altogether agreeing with every detail, advised the executive to give it a fair trial.

This drill has formed the basis of that now used, which is simply a modification of the original system so as to bring it into conformity with the views of the society's honorary consulting medical officers, with the addition of various commands from the 'squad drill' in the 'Infantry Drill Book' of 1892, permission to reprint which was granted to the society by the Controller of Her Majesty's Stationery Office. The revised drill is, by permission of the society, reprinted in this work.

In recognition of his most valuable services to the cause, services which should ever be remembered by swimmers, Mr. Wilson was elected the first life governor of the society.

The first year's work was nearly all that of organisation, but in 1892 the society gained such support from the public that a national competition for teams of four from any school or club was inaugurated. A very valuable shield was presented by Messrs. Lever Brothers, Limited, as a perpetual trophy, and in addition they provided gold, silver and bronze medals for the winning teams. Twenty-four entries were secured, so that in all ninety-six individuals competed in the first year. The ties were drawn according to districts, and the final ended in a win for the Nottingham Club, who had beaten South Side, Glasgow, and Leeds in the earlier rounds. Ravensbourne, a London house club, took second place, an unprecedented success in the history of 'house' clubs, in a

national competition. In addition to holding the Challenge Shield for one year, the four members of the winning team were each awarded a gold medal. The second team received silver medals, and the third and fourth teams bronze medals. In view of the large entry for the contest the executive decided to create district and divisional competitions, and awarded bronze medals also to the two teams who were at the head of such districts or divisions, but who failed to qualify for prizes in the penultimate and final ties.

Soon after the handbook was published, classes of instruction were formed in different parts of the country. They were all well attended, and many of the members passed the examination for the proficiency medal. Candidates for this medal must be able to swim, and must have attended at least ten meetings of a class of instruction. The subjects of examination are as follows :—(*a*) The information contained in the society's handbook ; (*b*) efficiency in the drills for rescue and releasing one's self from the clutch of a drowning person to be demonstrated on land and in the water ; (*c*) resuscitation and treatment after natural breathing has been restored. The classes are gradually spreading over the country, and many valuable lives have been saved by the agency of those taking part in the drills or witnessing the demonstrations. For instance, on October 15, 1892, a lighterman, while working in the Surrey Commercial Docks,

THE LIFE-SAVING SOCIETY COMPETITION MEDAL.

THE LIFE-SAVING SOCIETY PROFICIENCY MEDAL.

slipped off his barge into twenty or thirty feet of water, and, being unable to swim, at once sank. Assistance was rendered, and after having been immersed for three or four minutes the lighterman was brought to the surface in an apparently lifeless condition. A contractor named Edward Nicholls, who had seen one of the many free demonstrations of the Life-saving Society given in the docks, assisted by several deal porters, immediately put into practice the knowledge he had gained, and when a doctor arrived the man had recovered consciousness, and circulation was being restored.

The most interesting of the classes already formed for the purpose of imparting instruction, such as Edward Nicholls found so eminently serviceable, are those started in connection with the London Board Schools and Metropolitan Police, whilst amongst those which have attained the highest degree of proficiency are the Ravensbourne Club (London), the South Side Club (Glasgow), the Leeds classes (male and female), and the Nottingham Club, the last-named, as just mentioned, being the first winners of the National Competition.

An important branch of the society's work consists of arranging public lectures and holding demonstrations, with practical illustrations of rescue in the water, releasing from the grip of drowning persons, and resuscitation. In the year 1892 nearly one hundred of such lectures were given, many of them at great personal inconvenience, by the acting president, Dr. W. Collingridge. Amongst the most notable of them was a *soirée* at St. George's Baths, Buckingham Palace Road, London (to which the medical profession and other scientific bodies were invited), a competition meeting at Liverpool, and demonstrations, by special invitation of the respective mayors and corporations, at Richmond, Luton, and Worthing, the last from the pier-head.

Such displays are most useful as being the means of making known to thousands of spectators the various methods adopted by the society, as well as awakening general interest in the district. It has invariably been found that these demonstrations

are followed by a large demand for information, local classes in most instances being eventually formed.

Although the society is but young, its claims have been largely recognised by the press of the United Kingdom. Its objects are :

1. To promote technical education in life-saving and resuscitation of the apparently drowned.

2. To stimulate public opinion in favour of the general adoption of swimming and life-saving as a branch of instruction in schools, colleges, &c.

3. To encourage floating, diving, plunging, and such other swimming arts as would be of assistance to a person attempting to save life.

4. To arrange and promote public lectures, demonstrations, and competitions, and to form classes of instruction, so as to bring about a widespread and thorough knowledge of the principles which underlie the art of natation.

At the annual meeting of the society in February, 1893, the executive were able to announce that H.R.H. the Duke of York had graciously consented to become the President of the society. Further, H.S.H. the Duke of Teck became vice-president, and Lord Ampthill, himself a swimmer of no mean ability, accepted the position of acting president for the year in the room of Dr. Collingridge, the value of whose service to the cause cannot be over-estimated. Whilst the society receives support such as this it must rapidly develop. Its powers for usefulness are unbounded, its claims to the support of every Englishman incontestable, and its objects worthy of emulation by the young men of every country in the world.

In teaching a class the life-saving drill, the instructor should first of all make himself conversant with the 'squad drill' contained in the official 'Infantry Drill Book.' This is included in the society's publications, but it is not considered necessary to quote it here, as the drill is very well known. The preliminary drill is only intended for those who have not previously been drilled either at school or in some branch of Her Majesty's service. By forming such members into a separate

class, until qualified, the ordinary land drills need not be stopped.

It is important that the instructor should be firm and clear in giving his directions, pronouncing each command loudly enough to be heard by all concerned, and that his criticisms at the end of the drill should be of a general rather than a personal character. The reason for each part of the drill should be explained before proceeding to another.

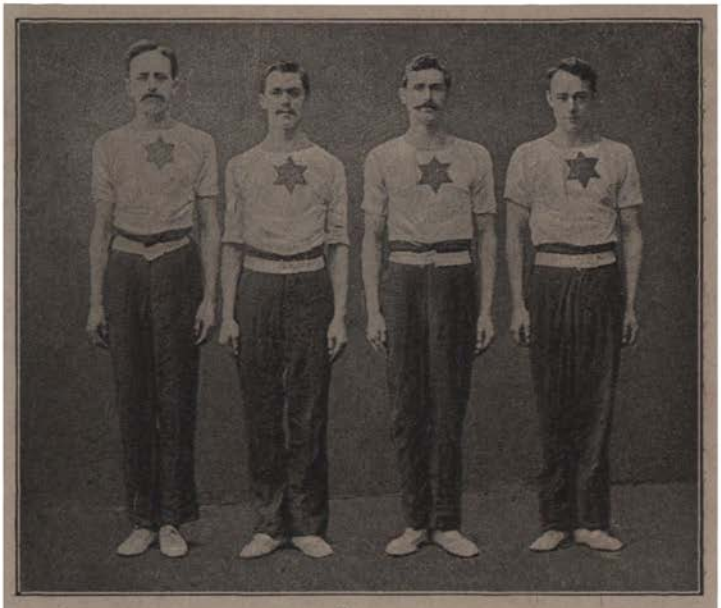


FIG. 1

LAND-DRILL RESCUE PRACTICE

Formation of Squad or Class

On the command 'fall in,' the members will form up in single rank, according to size, and take up the position of 'stand at ease' (fig. 1).

1. *Attention.*—On the command 'attention,' all will spring up smartly to the position of 'attention.'

2. *Right Dress—Eyes Front.*

3. *Number.*—On the word 'number,' the right-hand man will call out 'one ;' his left hand man 'two,' and so on until each has called out his number in the line. Care must be taken to keep the shoulders and eyes straight to the front.

4. *Form—Two Deep.*—On the word 'deep,' the even numbers will take a pace to the rear with the left foot, and a pace to the right with the right foot, and cover the odd numbers correctly.

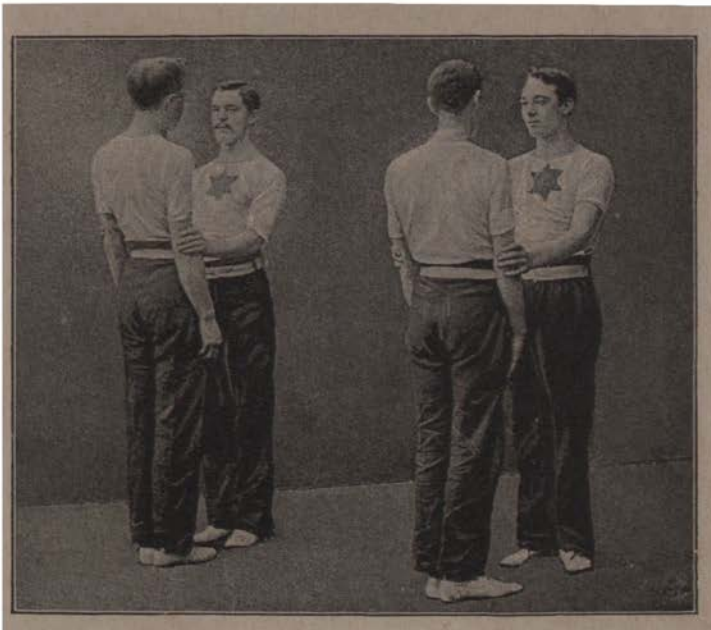


FIG. 2

5. *From the Right—Extend.*—On the word 'extend,' No. 1 of the front rank stands fast, at the same time raising his left arm in line with his shoulder. The remainder of the front rank raise both arms and 'ease off' to the left, by taking short quick side steps, until each man's fingers touch the fingers of his right and left hand men. The rear-rank men move with their front-rank men and cover them correctly.

6. *Inwards—Turn.*—On the word 'turn,' the whole of the front rank will turn to the right-about; at the same time the rear rank will take a short pace to the rear.

First Method

7. *For Rescue Drill—First Method—Ready.*—On the word 'ready,' the rear rank will step up one short pace, and each one

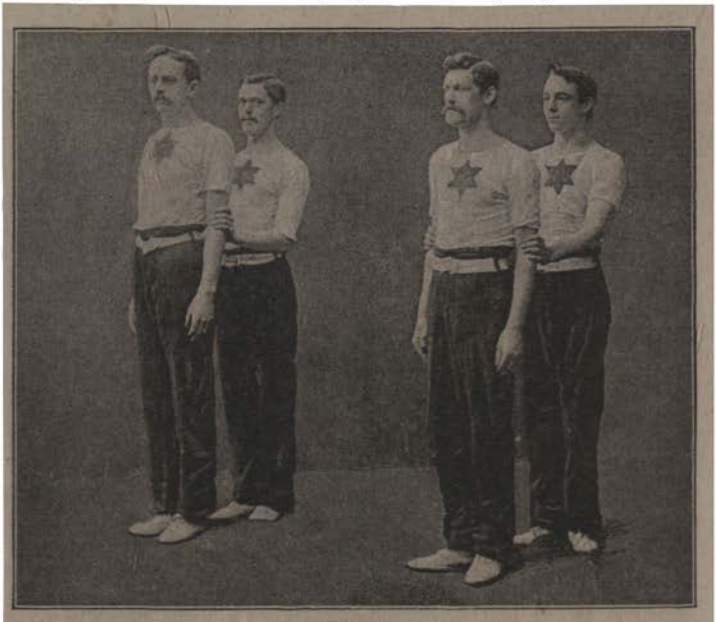


Fig. 3

will grasp his front-rank man by the arms, immediately above the elbows, fingers outside, thumbs inward. At the same time, the front-rank man will place the heel of the right foot in the hollow of the left (fig. 2).

8. *One.*—On the word 'one,' the rear-rank man will push outwards with his right hand, and draw inwards with his left until his front-rank man has been turned facing the right flank.

9. *Two.*—On the word 'two,' the rear-rank man will let go his grip instantly change hands, and by repeating the movement

of his hands turn the front-rank man until he faces the front (fig. 3).

10. *Three.*—On the word 'three,' the rear-rank man will let go his hold, and pass his hands up to the sides of the face of his front-rank man, who will lean his head slightly back, so that the palms of he hands can cover the ears (fig. 4.)

11. *Disengage.*—On the word 'disengage,' all will drop hands to the side and assume the position of 'attention.'

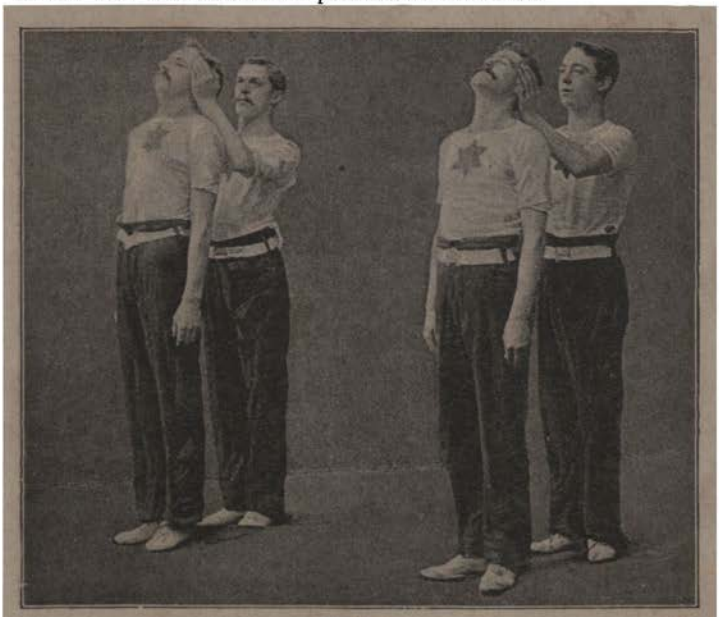


FIG. 4.

12. *Inwards—Turn.*—On the word 'turn,' the whole of the front rank will turn to the right-about; at the same time the rear rank will take a short pace to the rear.

SECOND METHOD

13. *For Rescue Drill Second Method—Ready.*—On the word 'ready,' the rear rank will step up one short pace, and each one will grasp his front-rank man by the arms, immediately above the elbows, fingers outside, thumbs inward. At the same time, the

front-rank man will place the heel of his right foot in the hollow of the left.

14. *One.*—On the word 'one,' the rear-rank man will push outwards with his right hand, and draw inwards with his left until his front-rank man has been turned completely round and faces the front.

15. *Two.*—On the word 'two,' the rear-rank man will change his grip of the front-rank man's arm, by turning the thumbs

FIG. 5

outward and the fingers inward, and lift the arms from the body outward.

16. *Three.*—On the word 'three,' the rear-rank man will bring his own elbows close to the sides of his body, at the same time extending the arms of the front-rank man until they are at right angles to the body (fig. 5).

17. *Disengage.*—On the word 'disengage,' all will drop hands to the side and assume the position of 'attention.'

18. *Inwards Turn.*—On the word 'turn,' the whole of the front

rank will turn to the right-about; at the same the rear rank will take a short pace to the rear.

THIRD METHOD

19. *For Rescue Drill—Third Method—Ready.*—On the word 'ready,' the rear-rank man will step up one short pace, and each one will grasp his front-rank man by the arms, immediately above the elbows, fingers outside, thumbs inward. At the same time, the

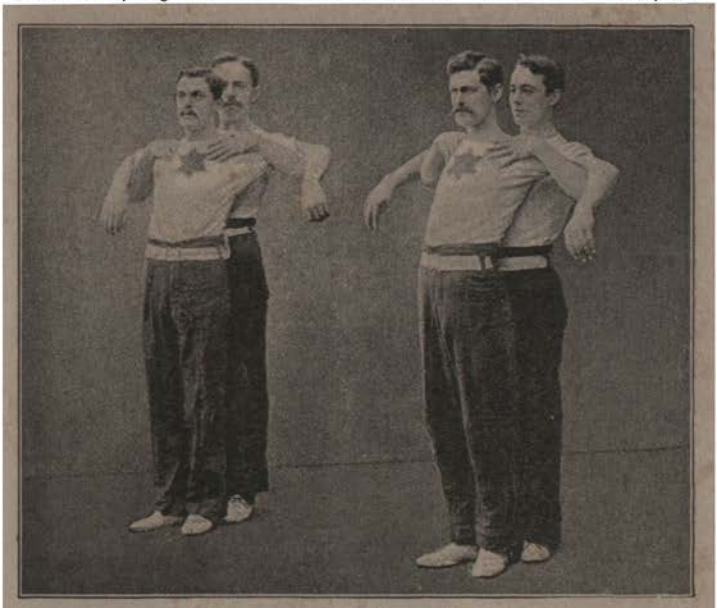


FIG. 6

front-rank man will place the heel of his right foot in the hollow of his left.

20. *One.*—On the word 'one,' the rear-rank man will push outwards with his right hand, and draw inwards with his left until his front-rank man has been turned completely round and faces the front.

21. *Two.*—On the word 'two,' the rear-rank man will push his arms under those of the front-rank man as far as he can reach.

22. *Three.*—On the word 'three,' the rear-rank man will bend

his arms upward, and place his hands flat over his front-rank man's shoulder-joints. He will at the same time square out his own elbows, and thus carry the front-rank man's arms to the elbows at right angles (fig. 6).

23. *Disengage.*—On the word 'disengage,' all will drop hands to the side and assume the position of 'attention.'

24. *Inwards Turn.*—On the word 'turn,' the whole of the front

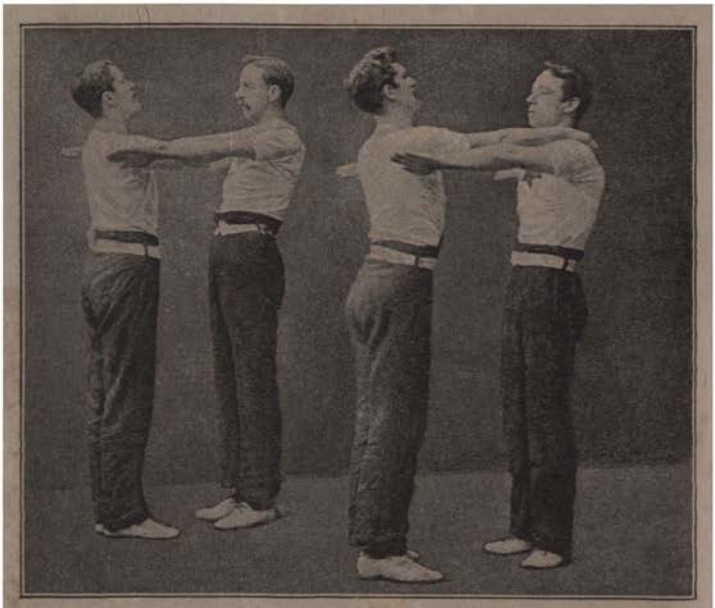


FIG. 7

rank will turn to the right-about ; at the same time the rear rank will take a short pace to the rear.

FOURTH METHOD

25. *For Rescue Drill—Fourth Method—Ready.*—On the word 'ready,' the rear rank will step up one short pace, the front-rank man standing fast will reach out both arms at full stretch, placing the hands on his rear man's shoulders close to the neck and leaning well back.

26. *One.*—On the word 'one,' the rear-rank man will stretch out both arms and hands, palms downwards, to the full extent past the front-rank man's shoulders in the first position of the breast-stroke (fig. 7).

27. *Two.*—On the word 'two,' the rear-rank man will carry his arms outward and round in the second position, or propelling position of the breast-stroke.

28. *Three.*—On the word 'three,' the rear-rank man will recover his hands to the position of renewing the stroke.

29. *Disengage.*—On the word 'disengage,' all will drop hands to the side and assume the position of 'attention.'

30. *Front.*—On the word 'front,' the front rank will right-about turn, at the same time the rear rank will take a pace to the left with the left foot, and a pace to the front with the right foot, and this will bring all once more into line.

31. *Stand at Ease.*

32. *Attention.*

33. *Change Rank—Two Deep.*—On the word 'deep' the odd numbers will take one pace to the rear with the right foot, and one pace to the left with the left foot, and cover the front rank or even numbers correctly. Thus the former front rank becomes the rear rank, and the drill is repeated as before from command No. 6. By this means each member is made to go through each portion of the drill.

34. *Right Turn—Dismiss.*

RELEASE DRILL (ON LAND)

The object of this drill is to teach how to release oneself from the clutch of a drowning person.

The squad will be 'numbered' and formed 'two deep.'

FIRST METHOD

Inwards—Turn—For Release Drill—First Method Ready.—On the command 'ready,' the rear-rank man will raise his hands to the level of his shoulders. At the same time, the front-rank man will grasp him by the wrist, thumbs inwards, fingers outwards (fig. 8).

One.—On the word 'one,' the rear-rank man will take a short pace to the rear with his left foot, and raise his elbows until the arms are extended, the front-rank man still keeping a firm hold.

Two.—On the word 'two,' the rear-rank man will bring his

hands down until they are in line with his hips, work his wrists against the thumbs of the front-rank man (fig. 9), and with a smart jerk, which will cause the front-rank man to loosen his hold, bring them again in line with the shoulder at right angles to the side of the body.

Three.—On the word 'three,' both will drop hands to the side, and the rear rank will close up one short pace to the front.

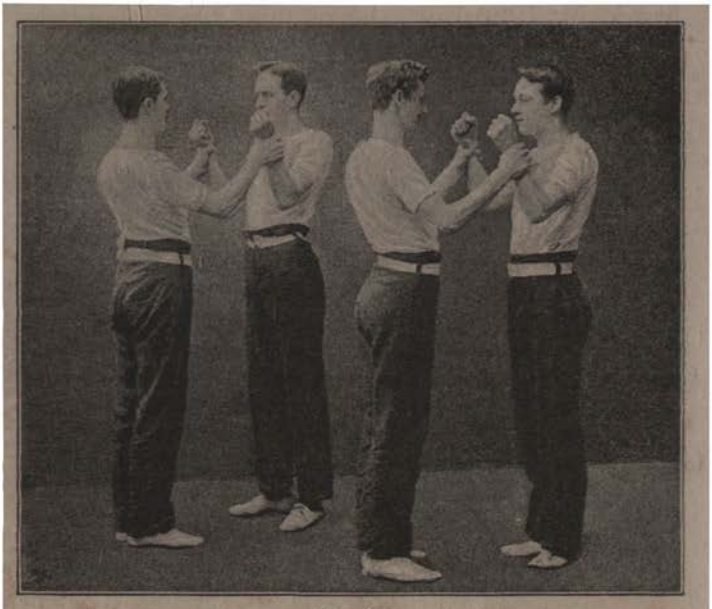


FIG. 8

SECOND METHOD

Ready.—On the command 'ready,' the front-rank man will raise his arms and clasp the rear-rank man round the neck, keeping his arms at full stretch, and fingers interlaced.

One.—On the word 'one,' the rear-rank man will place his right foot outside the left foot of the front-rank man, and place his left hand in the small of the back.

Two.—On the word 'two,' the rear-rank man will bend slightly over, and at the same time raise his right arm in line with the

shoulder of the front-rank man, and passing his right hand over, will catch the nose of the front-rank man between the second and third fingers, and rest the palm on his chin (fig. 10).

Three.—On the word 'three,' the rear-rank man will turn his body toward the front-rank man, and push outwards. As soon as the push is made, the front-rank man will release his hold and both come to 'attention.'

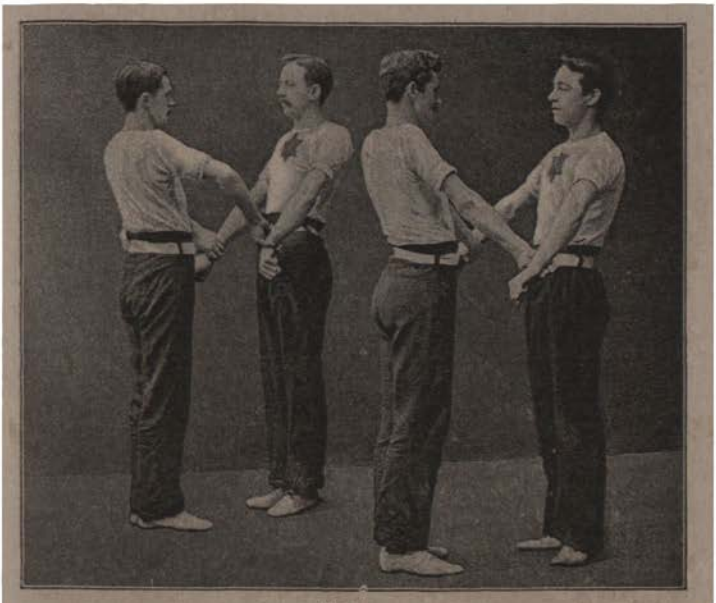


FIG. 9

THIRD METHOD

Ready.—On the command 'ready, the rear-rank man will take one pace to the front; the front-rank man will pass his arms over or outside those of the rear-rank man, and clasp his hands behind the back.

One.—On the word 'one,' the rear-rank man will place his left hand on the right shoulder of the front-rank man, bring his right arm over the left arm of the front-rank man, and place his open hand against the chin.

Two.—On the word 'two,' the rear-rank man will lift his right

knee and place it as high as possible against the abdomen of the front-rank man. The front-rank man will carry back the right foot one pace (fig. 11).

Three.—On the word 'three,' the rear-rank man will bend slightly over towards the front-rank man, and at the same time by a sudden push against the chin with the right hand, and the abdomen with the right knee, cause the front-rank man to release his grip, when both will drop hands to the side and stand at 'attention.'

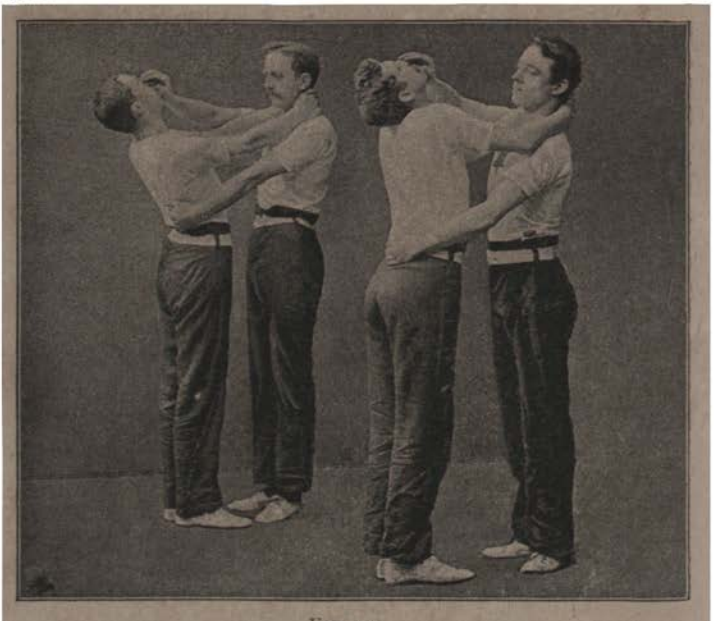


FIG. 10

Front. Change—Rank—Two Deep.—These commands are the same as Nos. 30 and 33, and the drill is repeated.

The object of teaching the foregoing drills on land is to inculcate into the minds of the pupils the correct methods of approaching and gripping a drowning person, as it is far easier to do this on land than in the water. The release drill can only be carried through on land, as in the water the movements have

to be made immediately and effectually in order to free oneself from the clutch, and the commands cannot be given. It is, however, important that it should be practised in the water, and the efficient performance of it made one of the tests in an examination.

Any swimmer who has gone through the land rescue drill can at once perform the same drill in the water, but to attain

FIG. 11

a high state of proficiency back swimming must be made a subject of special study. The style best suited for rescue work has already been detailed in the chapter on the Art of Swimming. As in the land exercises, rescue practice in the water is carried out by means of a drill, and when a number of squads take part in it the sight is both pretty and instructive. The drill is as follows :

RESCUE DRILL (IN THE WATER)

The object of this drill is to teach by actual practice in the water how to carry a person to shore, by the same methods as taught in the Land Rescue Drills.

Fall In.—The members will form up in single rank one pace from the edge of the water.

Right Dress—Eyes Front: Number. Form Two Deep.—All the foregoing movements are the same as in Land Drills.

FIRST METHOD

Ready.—On the word 'ready,' the front rank will take one pace to the front and stand prepared to plunge.

Go.—On the word 'go,' they will plunge into the water, swim a distance of about ten yards, turn and remain facing the starting point, by swimming or treading water.

Rescuers—Ready.—On the word 'ready,' the rear rank will step to the edge of the water and stand prepared to plunge.

Go.—On the word 'go,' the rear rank will plunge into the water and each swim to his front-rank man, seize him, turn him on to his back and carry him, in accordance with the first method (as taught in the Land Drill), to the place from which the start was made. Then all leave the water and re-form into line (each one in his respective place) and stand at 'attention.'

Change Rank—Two Deep.—(As in Rescue Land Drill.)

FIRST METHOD

Ready. (As before.)

Go. (As before.)

Rescuers—Ready. (As before.)

Go. (As before.)

Form Two Deep. (As before.)

SECOND METHOD

Ready.—For the second, third, and fourth methods, the command will be repeated in the same order as for the first method, substituting the words second, third, and fourth for the word first, and the drill will be continued in the order given.

In actual rescue work the rescuer should be as cool and calm as possible. If the tide be against him, he should try to

make for some spot towards which it is drifting, or at any rate, if he be some distance from shore, not get right athwart the tide and thus waste his strength. The boots, &c., and as much clothing as time permits, should be removed before attempting a rescue.

When clutched by a drowning person there must be no hesitation. Two lives are in jeopardy, and only what may possibly seem extreme methods will be of any avail. Every action must be prompt and decisive. The release drills on land, already detailed, are designed to illustrate and teach the following simple methods of getting rid of the attentions of a too demonstrative drowning man.

1. If held by the wrists, take a deep breath, and turn both arms simultaneously against the drowning person's thumbs, outwards, and attempt to bring your arms at right angles to your own body. This will dislocate the thumbs of the drowning person, and he must leave go his hold.

2. If clutched round the neck, immediately bring the knees up between the two bodies, placing them against the lower part of your opponent's chest, and by means of a strong and somewhat sudden push stretch your legs out straight, at the same time throwing the whole weight of the body backwards. This sudden motion will press the air out of the other's chest, as well as push him off, no matter how tightly he may be holding.

3. If clutched low round the body and arms, lean well over your opponent and throw one arm in an upward direction at right angles to the body, or draw one arm up between your body and that of your opponent. Then with the thumb and forefinger catch the nose and pinch the nostrils close, and at the same time place the palm of the hand on the chin and push outwards. This will cause him to open his mouth for breathing purposes, and he, being under you, will swallow water. Choking ensues, and not only is the rescuer let go, but the other is left so helpless as to be completely under control. As in the case of No. 2, an endeavour should be made to raise the knees, but this is somewhat difficult.

4. If clutched high round the body and arms, lean well over as in No. 3, and turn one arm in an outward and upward direction, which movement will free the arm, and then proceed as in the case of No. 3.

RESUSCITATION

A committee of the Royal Medical and Chirurgical Society has been endeavouring to formulate a new system of resuscitation, or to report on the methods now in vogue, but the long-promised report is not yet forthcoming.

The system which is at the present time most generally recommended is the Silvester, so called because it was suggested by Mr. H. R. Silvester, M.D., who in 1883 received the Fothergill Medal from the Royal Humane Society for his scientific researches. The Marshall Hall and Howard methods are also constantly practised. The forerunner of these systems was a means of inducing artificial respiration by inserting the pipe of a pair of bellows into one nostril and closing the other. Air was forced into the lungs and then expelled by pressing the chest, thus imitating respiration. Dr. Hawes, the founder of the Royal Humane Society, at the end of last century used a kind of cradle in which the subject was placed and then raised over a furnace. Bleeding, holding up by the heels, rolling on casks, &c., were at various times recommended, but all were gradually discarded for the Silvester, Marshall Hall, or Howard method. Simple means are even now often resorted to in localities where the work of the Humane Societies is little known. A typical case occurred in New Zealand in 1891, when a person received an award from the Australasian Society for Rescue and Resuscitation, the latter being accomplished by holding the subject over a smoky fire, which is the native method of restoring life.

Persons have of course been revived by many other means than what may be termed the official systems. A case occurred at a riverside town a few years back, in which a man was restored after the Silvester method had been tried without success. The operator (who may possibly have acted unskilfully) was thrust aside by a spectator, who placed his handkerchief across the mouth of the patient, and then alternately blew into and drew air out of the lungs of the apparently dead

man, until natural breathing was restored. But in view of the vast amount of success which has attended the adoption of the official systems, it is, perhaps, best to study them exclusively until some other method is generally advocated by the leading Humane Societies, who all have the advantage of advice and assistance from eminent medical men, ever ready to serve the cause of suffering humanity.

Before proceeding to describe the various methods of resuscitation it is as well, in order that the principles regulating them may be fully understood, to give a general description of the organs which are primarily affected by continued immersion beneath the surface. The lungs have allotted to them the important duty of purifying the blood. They take from it the carbonic acid gas which it accumulates in its circulation through the body, and in exchange supply it with oxygen, so that it may be purified before it re-enters the heart. Therefore, if the lungs be deprived of a supply of oxygen, the accumulated carbonic acid increases largely in volume, and the whole body is quickly poisoned.

The lungs are two large membranous bodies which, with the heart, fill the cavity of the *thorax*, or chest. The only entrance to them is through the *trachea*, or windpipe, which runs down the front of the neck. When felt through the skin, it will be noticed that this is strengthened by a series of cartilaginous hoops. At the top of the *trachea* is a chamber termed the *larynx*, the opening to which, termed the *glottis*, is protected by the *epiglottis*. The *trachea* passes downward into the *thorax*, and then is divided into two branches, one going to the right and the other to the left lung. These are termed the *bronchi*. As soon as these enter the lungs they subdivide into numerous branches, termed the *bronchial tubes*. The larger bronchial tubes are supplied with cartilage, but as the tubes get smaller and smaller the cartilage disappears, and the tubes can almost be closed by muscular movement. At the termination of these minute tubes are the air cells, a series of little sacs opening into a cavity. According to Professor Huxley, their average

diameter is but $\frac{1}{40}$th of an inch. Each lung is made up of these cells. The partitions between them are composed of very delicate tissue, and through them are carried the blood capillaries, separated only from the air cells by a most delicate lining. The lungs, which are both highly elastic, are each enveloped in a double membranous bag known as the *pleura*, the outer bag lining the cavity of the chest and the inner protecting the lung. In an ordinary being these two bags are in close contact. Below the lungs is the great arched muscle known as the *diaphragm*, which separates the body into two distinct divisions, the *thorax* and the *abdomen*. Through the diaphragm the large blood-vessels supplying the lower portion of the body are carried. The cavity of the *thorax* is surrounded and protected by the ribs, which are attached to the spine, and are supplied with muscles capable of raising or depressing them at will.

Respiration is the act of breathing. It is divided into two distinct parts—inspiration and expiration. Inspiration is the drawing in of air through the nostrils or mouth, and past the *glottis* into the *trachea*. Expiration is the driving out of the air. Inspiration is immediately followed by expiration, then there is a slight pause before the next inspiration. The respiratory act is repeated from thirteen to fifteen times a minute when an adult is breathing calmly. The act of inspiration is performed by the contraction of the diaphragm towards the abdomen, thereby increasing the depth of the thorax from above downwards, and the air immediately rushes in to distend the lungs and prevent the formation of a vacuum between the inner and outer pleuræ. As soon as the diaphragm ceases to contract the air is expelled, as the thoracic cavity becomes smaller. In addition to the action of the diaphragm, the inter-costal muscles contract, the ribs are raised, and the sternum or breast-bone forced outwards, thus increasing the depth of the thorax from the sternum to the spine. As soon as they relax the ribs come back to their normal position, and in this they are also probably aided by other muscles.

'It is a remarkable circumstance,' says Professor Huxley,

'that the mechanism of respiration is somewhat different in the two sexes. In men, the diaphragm takes the larger share in the process, the upper ribs moving comparatively little; in women the reverse is the case, the respiratory act being more largely the result of the movement of the limbs.'

There is a certain amount of stationary air in the lungs, and into this is diffused the oxygen from the fresh air taken in, whilst the carbonic acid which it has taken from the blood through the walls of the capillaries is driven out. This process of exchange is ever proceeding, the whole of it being regulated from a nervous centre in the *medulla oblongata*, which is a continuation of the spinal cord at the base of the brain. Death from drowning is the result of asphyxia, the stoppage of a supply of pure air to the lungs. The oxygen gradually diminishes while the quantity of carbonic acid increases, and at length the air in the lungs becomes too impure to effect an exchange with the blood. Then the blood passing into the heart becomes venous, and at length the heart sends out to all parts of the body venous instead of arterial blood. Immediately a dull sickening pain, and one which under-water swimmers dread, because insensibility rapidly ensues, becomes apparent at the back of the neck. This arises from the affection of the respiratory centre in the medulla. In a very short space of time the brain is poisoned, the face becomes black through the veins being gorged with blood, and the heart ultimately ceases to beat.

The most important point in all resuscitation work is first of all, if possible, to send for a medical man. But even then no time must be lost in proceeding to restore breathing. The restoration of natural breathing must be the first effort; once that is accomplished, then the promotion of circulation and warmth may be attempted. When using the Silvester method, if no sign of life can be observed, nor the heart's action heard, the patient should be laid flat on the back, the dress loosened, and a roll of clothing or a pillow placed under the shoulder-blades, the arms during this operation being handled carefully.

The mouth and nostrils should then be cleared, and the tongue drawn forward. An elastic band or a strip of handkerchief, passed over the tongue and under the chin, may be used for this purpose. The best method of clearing the throat will be found in the resuscitation drill of the Life-saving Society on p. 240.

As soon as the throat is cleared and the tongue drawn forward—and too much stress cannot be given to the fact that it is of vital importance to see that the tongue does not fall back into the mouth—the operator should immediately proceed to imitate the movements of breathing. The arms of the patient should be grasped just below the elbow, and then drawn steadily upward full length above the head, and down beyond it until they are in line with the rest of the body. This raises the ribs and expands the chest, thereby allowing fresh air to enter. The arms should be kept in this position for about two seconds, and then carried back again and pressed firmly against the sides and front of the chest for another two seconds, so as to produce an expiration. These movements should be repeated carefully for about fifteen times a minute, and persevered with until natural respiration begins, or a medical man arrives and takes charge of the case. Friction should not be resorted to until a spontaneous effort is made to respire. In the absence of a medical man, the treatment should be maintained for hours, as the Royal Humane Society are aware of successful cases even after five hours' perseverance. All unnecessary crowding round a patient should be prevented, and care should be taken to avoid any rough usage, especially the bending or twisting of the limbs. Death is generally indicated by the entire cessation of breathing and the heart's action; the eyelids are half-closed, the pupils dilated; the tongue approaches to the under edge of the lips, and these, as well as the nostrils, are covered with a frothy mucus. Coldness and pallor of the surface increase.

If natural breathing be restored, the operator should attend to the mouth, nose, and throat, and see that warmth is properly

encouraged by placing hot-water bottles or hot bricks on the soles of the feet, the pit of the stomach, under the armpits, &c., whilst the assistants should resort to friction over the surface of the body, so as to assist the circulation. All rubbing should be along the body, in the direction of the heart, so as to assist the propulsion of the blood through the veins. The friction on the legs should all be upward, not first upward and then downward, and along the arms towards the body. If dry blankets or clothing are available, the patient should be wrapped in them, and the friction continued under the blankets or over the dry clothing. When the power of swallowing has returned, a teaspoonful of warm water, very small quantities of warm brandy and water, wine, beef-tea, or coffee, should be given, the patient placed in bed, and a disposition to sleep encouraged. If there be difficulty in breathing, a mustard plaister or hot linseed-meal poultice should be applied to the chest and below the shoulders. A doctor should always be summoned, even if the preliminary work detailed has been successfully accomplished in his absence, as complications arising from the entrance of water into the lungs sometimes ensue.

The Silvester method is taught by the Life-saving Society, as are also the other two systems named, by means of a drill. It has been found most effective to use a drill for the purposes of general instruction, and as each point is carefully explained, the pupils at the end of the course of lessons generally pass the final examinations, both theoretical and practical, in a highly creditable manner. In this, again, Mr. Wilson was to the fore, the original drill—upon which the following, now used by the society, was based—being formulated by him.

RESUSCITATION DRILL

ILLUSTRATING THE TREATMENT WHEN BREATHING IS SUSPENDED

Fall In—Attention—Right Dress—Eyes Front.—All the foregoing movements are the same as in Rescue Drill.

Number by Squads—From the Right.—On the word 'right,' the right-hand man will call out 'one,' and his left-hand man 'two,' and so on until the fourth man has numbered. The fifth man will recommence as No. 1; also the ninth, thirteenth, and every fifth man to the end of the line.

Tell off the Squads.—On the command 'squads,' No. 1 of each squad will call out the number of his squad in rotation, at the same time raising his right hand in front of the body in a line with the elbow. On the completion of numbering, the hands will drop again to the side. The squads being 'told off' should be moved in position, so that the work of one will not interfere with that of the other.

Note.—A mat or towels covering a space of about 6 feet by 2 feet should be placed in front of the four men forming the squad, when the ground or floor is hard to lie upon. A pillow or roll 1 ft. 6 in. in circumference should be placed at the side opposite No. 1.

Duties.—Note: The squads being formed and numbered, the instructor will here explain the objects of the drill and the duties of each man.

No. 1 of each squad will act as operator; No. 2 as patient; No. 3 will assist the operator, look after the patient's tongue, and see to the correct placing of the pillow under the patient's shoulder-blades; No. 4 will take charge of the legs and feet.

Positions.—On the word 'positions,' No. 2 steps out one pace to the front, turns to the left, walks to the left flank of the squad, and lies quietly down on his back, feet to the left, and head to the right flanks. Nos. 1, 3, and 4 will then take up the following positions: No. 1 at the patient's head, facing to the left; No. 3 at his left side, facing to the front; and No. 4 at his feet, facing to the right.

Ready.—On the word 'ready,' Nos. 1 and 4 will drop down on both knees, and No. 3 on his left knee.

Clear the Throat.—On the command 'clear the throat,' Nos. 1, 3 and 4 will turn the patient over on his right side until he is lying face downwards; No. 1 placing his left hand under the head, and taking hold of the patient's right arm with his right hand, and placing it so that when turned over the head may rest upon it; No. 3 will turn the body over by placing his right hand under the left shoulder, and his left hand on the left arm, so that it is carried with the body; No. 4 will seize both ankles and assist in turning the patient over by crossing the legs. As soon as the

patient is in position, the operator with his right hand will go through the motions of wiping and clearing the mouth, throat, and nostrils. After this operation has been performed, the patient will be turned again on his back, both arms lying straight to his side. No. 1 will lean over the patient and place his right ear, first at the mouth, then at the chest, to listen for any sound of respiration.

Attend to Tongue.—On the command 'attend to tongue,' the operator will go through the motions of drawing the patient's tongue forward, when No. 3 will secure it by placing a strip of handkerchief round the tongue and lower jaw.

Imitate Breathing—Silvester Method.—On the word 'method,' No. 3 will spring to his feet, step over the patient, pick up the pillow or roll, step back to his place, and while the operator raises the patient, will fix the pillow or roll under the patient's shoulder-blades from the left side.

Ready.—On the word 'ready,' the operator will lean forward and grasp the patient's arms below the elbows. At the same time No. 3 will go through the motions of loosening the garments (fig. 12).

FIG. 12

One.—On the word 'one,' the operator will pull the patient's arms quietly and steadily upward beyond the head toward himself fig. 13).

FIG. 13

Two.—On the word 'two,' he will bring the patient's arms back on to the chest.

Three.—On the word 'three,' he will press the patient's arms firmly against the sides and front of the chest for about two seconds (fig. 14).

Continue.—On the command 'continue,' the motions 'one' 'two' and 'three' will be continued in regular time.

Halt.—On the command 'halt,' the movement in progress must be completed, and after 'three,' the arms will be quietly replaced at the patient's side, and the operator will resume his first kneeling position.

Note.—During the progress of the foregoing motions, No. 3 will, after command 'one,' put his hand to the patient's mouth to ascertain that the tongue is well forward.

Promote Circulation and Warmth. On the command 'promote circulation and warmth,' Nos. 1 and 3 will immediately commence rubbing the patient, using handker-

chiefs, flannels, or any stuffs that may be handy. At the same time No. 4 will place a rug or towels over the patient's legs and commence rubbing underneath.

Note. — The rubbing should be upward.

Halt—Re-form.—On the word 're-form,' all spring to their feet, Nos. 3 and 4 assisting No. 2 to rise. No. 1 will remove the pillow or roll to its original position.

Squad.—On the word 'squad,' all will resume their original position in line, facing the front.

Stand at Ease.

Note.— The instructor may here criticise the work done, or give explanations.

Attention.

Change Flank.—On the word 'flank,' No. 1 will step back one pace with his left foot, turn correctly to the left, march to the other end of the squad, and take up his position in line with the others. As No. 1 steps back, the remainder will close to the right one pace. (Thus the former patient becomes the operator, and so on.)

Note.—The squad will now be re-numbered, and the drill will be repeated from the command 'Positions.' This should be done until each member of the squad has had his turn at all the duties.

FIG. 14

Dismissing.—Before dismissing, the squads should be moved

back into their original position in line, when the commands will be

Right Turn—Dismiss.

In the Marshall Hall method of resuscitation the patient is turned over face downward, with one of the arms under the forehead, care being taken that none of the limbs are twisted or handled in such a manner as to cause injury. Fluids will then more readily escape from the mouth, and the tongue will fall forward. The mouth and nostrils are cleansed with a handkerchief, and any frothy mucus cleared away. Then, assuming that no sign of life is apparent, the patient is turned on his face again, and a roll of clothing or some similar article placed under the shoulder-blades. The operator takes his place at the patient's left side, and turns him face downward. The assistant at the head sees that the patient's arms are not twisted or lain upon, that the tongue is not allowed to drop back, and that the roll of clothing is kept in a proper position under the chest. The operator then makes firm pressure with the hand upon the back, between and on the shoulder-blades, and pulls the body slowly upon its side and a little beyond, until it is in the position shown in diagram (fig. 16). The body is at once pushed back briskly on to the face, the left hand of the operator carried forward and pressed between the shoulders firmly, removing the pressure immediately before turning the body on its side. These movements should be persevered in at the rate of about fifteen times a minute, occasionally varying the side from which the operation is started. The preliminary drill as to clearing the throat before starting the Marshall Hall method is the same as that adopted in the Silvester.

MARSHALL HALL METHOD
ILLUSTRATING THE TREATMENT WHEN BREATHING IS SUSPENDED

Fall In—Attention—Right Dress—Eyes Front—Number by Squads—Tell off the Squads.—All the foregoing movements are the same as in the Silvester drill.

Duties.—Note.—The squads being formed and numbered, the instructor will here explain the objects of the drill and duties of each man. No. 1 of each squad will take charge of the patient's head, look after the tongue, assist in raising, supporting, and turning the patient; No. 2 will act as patient; No. 3 will act as operator, and see to the correct placing of the pillow under the patient's shoulder-blades; No. 4 will take charge of the feet and legs, and assist in turning the patient backward and forward.

FIG. 15

Positions.—On the word 'positions,' No. 2 steps out one pace to the front, turns to the left, walks to the left flank of the squad, and lies quietly down on his back, feet to the left, and head to the right flanks. Nos. 1, 3 and 4 will then take up the following positions: No. 1 at the patient's head, facing to the left; No. 3 at his left side, facing to the front; and No. 4 at his feet, facing to the right.

Ready.—On the word 'ready,' Nos. 1 and 4 will drop down on both knees, and No. 3 on his left knee.

Clear the Throat—Attend to Tongue.—The instructions for the foregoing commands are the same as in the Silvester drill.

Imitate Breathing—Marshall Hall Method.—On the word 'method,' No. 3 will spring to his feet, step over the patient, pick up the pillow or roll, step back to his place, and while No. 1 raises the patient, will fix the pillow or roll under the patient's shoulder-blades from the left side.

FIG. 16

Ready. On the word 'ready,' No. 3 will lean forward and take hold of the patient's left shoulder with his right hand, and the left hip with his left hand, and assisted by Nos. 1 and 4 will turn the patient (as for clearing the throat) over on his right side until he lying (lies) face downwards with his chest supported on the pillow or roll, and the head resting upon his right arm (fig. 15).

One.—On the word 'one,' No. 3, assisted by Nos. 1 and 4, will turn the patient gently on to his right side by pulling the patient up towards himself by the left shoulder and hip (fig. 16).

Two. On the word 'two,' No. 3 will push the patient back until he is again lying face downwards.

Three. On the word 'three,' while the patient's body is resting on the

pillow, and the head upon his right arm, No. 3 with his left hand will press firmly upon the back, between and on the shoulder-blades (fig. 17)

Continue.—On the command 'continue,' the motions 'one' 'two' and 'three' will be continued in regular time, twice in succession.

Change Sides.—On the word 'sides,' No. 3 will step over the patient, kneel down and take hold of the patient's right shoulder with his left hand, and the right hip with his right hand. No. 1 will take hold of the patient's left arm with his right hand, and, supporting the head with his left, will place the patient's left arm under the head, so that it may rest upon it.

Continue.—On the command 'continue,' the motions 'one' 'two' and 'three' will be continued in regular time, twice in succession, No. 3 substituting the right hand for the left, for the pressure in the back in motion 'three.'

Halt.—On the command 'halt,' after completing motion 'three,' the patient will be replaced upon his back, face upwards, and his arms laid quietly at his side, No. 3 will then step over the patient and resume his first kneeling position.

Re-form. On the command 're-form,' all spring to their feet, Nos. 3 and 4 assist-

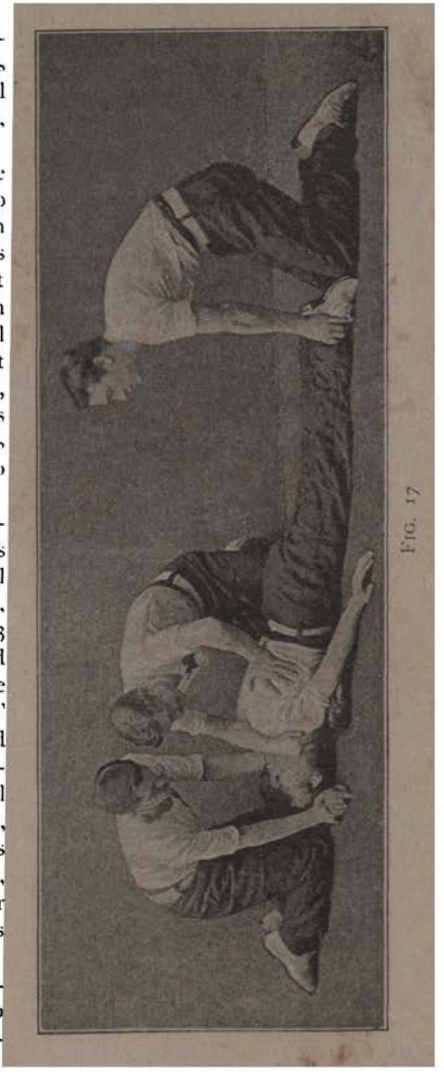


FIG. 17

ing No. 2 to rise. No. 1 will remove the pillow or roll to its original position.

Squad—Stand at Ease—Attention—Change Flank—Dismiss.—All the foregoing as in the Silvester drill.

The Howard method is an American system, formulated by Dr. Howard, of the Life-saving Benevolent Association of New York. It can be more easily put into practice than the Silvester or Marshall Hall method, as there are only two movements; but there is a danger of injuring the patient by too forcible pressure. In this method the roll of clothing is placed further down the back, so as to elevate the stomach. The arms are carried beyond the head, and the wrists crossed. If there be an assistant, it is his duty to hold the arms in position, clean the mouth, and attend to the tongue. In the absence of an assistant, the operator has to do the preliminary work himself, and then kneel down over the patient, grasp the lower ribs, the fingers being spread well apart over the chest, and the thumbs pressing inward. He then leans forward, and pushes upward until his face is nearly level with the patient. By this method the ribs are pushed upward, and the operator then springs back to a kneeling position, lifting his hands off the patient. The movements are continued at the rate of fifteen times a minute. If it be considered necessary to teach this method, the following drill will be found useful.

HOWARD METHOD

ILLUSTRATING THE TREATMENT WHEN BREATHING IS SUSPENDED

Fall In—Attention—Right Dress—Eyes Front—Number by Squads—Tell off the Squads.—All the foregoing movements are the same as in the Silvester drill.

Duties.—Note.—The squads being formed and numbered, the instructor here will explain the objects of the drill and duties of each man. No. 1 of each squad will take charge of the head, assist in raising and supporting the patient, look after the tongue and hands; No. 2 will act as patient; No. 3 will act as operator, and see to the correct placing of the pillow under the patient's shoulder-blades; No. 4 will take charge of the feet and legs.

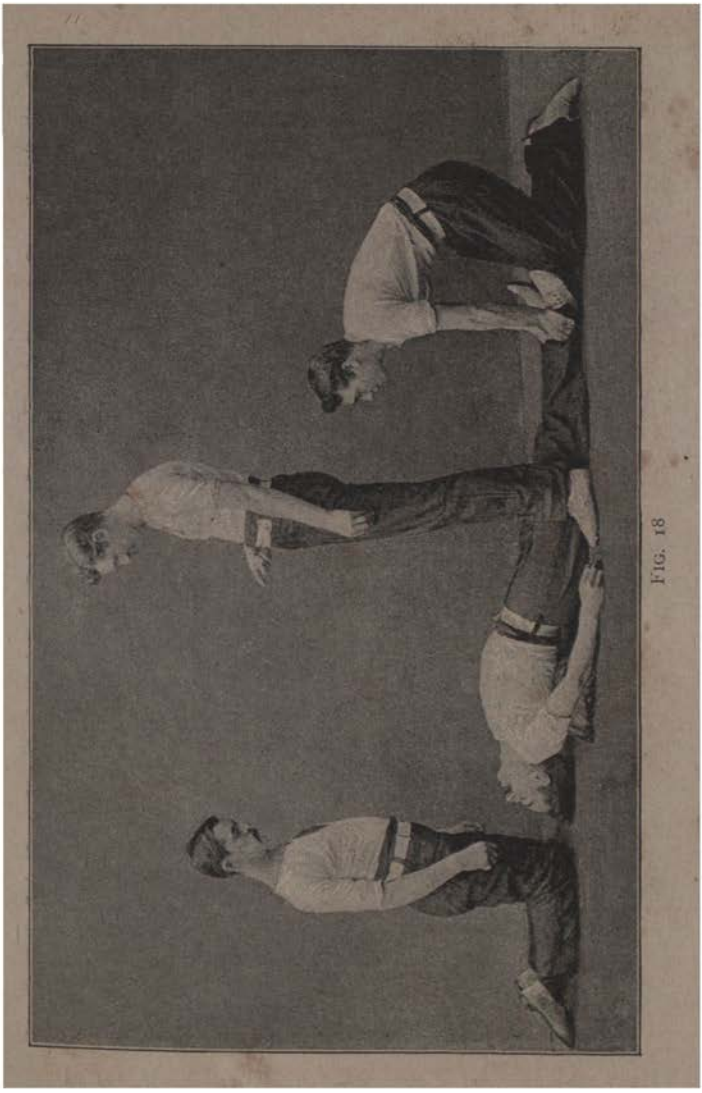


FIG. 18

Positions Ready—Clear the Throat—Attend to Tongue.—All the foregoing movements are the same as in the Silvester drill.

FIG. 19

Imitate Breathing—Howard Method.—On the word 'method,' No. 3 will spring to his feet, step over the patient, pick up the pillow or roll, and while No. 1 raises the patient, will fix the pillow from the left side under the patient's back, so as to cause the stomach to be the highest elevated part (fig. 18).

Ready.—On the word 'ready,' No. 1 will lift the patient's hands and pull them at full stretch beyond the head, cross the wrists, and hold them in position with the left hand, with the right to see to the tongue and wipe the mouth; No. 3 to kneel down astride the patient's thighs, and with his fingers extended, place his hands on the lower ribs on each side of the patient's body (fig. 19).

One. On the word 'one,' No. 3 will lean forward and steadily apply his weight, pushing upward with both hands, throwing his body forward over the patient.

Two.—On the word 'two,' No. 3 by a firm push will spring back

to the first position, and lift his hands off the patient's body (fig. 20).

Continue.—On the word 'continue,' the motions 'one' and 'two' will be continued in regular time, twice in succession.

Halt.—On the word 'halt,' after completing motion 'two,' No. 1 will replace the patient's hands at his side, No. 3 will spring up, step back, and kneel down in his original position at the patient's left side.

Re-form—Squad—Stand at Ease Attention—Change Flank—Dismiss.—All the foregoing are the same as in the Silvester drill.

FIG. 20

These simple drills of the Life-saving Society have been the means of bringing home to swimmers the necessity that exists for organised instruction in the principles of life-saving. It is within our recollection that swimming has risen from a very lowly estate in the eyes of the public; and, by increased energy on the part of the swimming community, it may eventually be conceded by the Government of the day that swimming and life-saving practice must be included

in the education of every boy and girl. The printed instructions which are from time to time sent out broadcast by such admirable organisations as the Royal Humane Society and the Royal National Lifeboat Institution have been the means whereby many valuable lives have been saved and happiness restored to many an English home ; but it still happens that there is often doubt and confusion as to the definite line of action to be adopted in a case of emergency. Such action must be prompt, but it must also be well directed, and therein lies the value of practical teaching. When once the drill is acquired, its principles are never forgotten. It is quite possible to grasp it by simply witnessing one exhibition, the drill almost instinctively fixing itself upon the mind of any person who may have been taught a system of physical drill at school or in Her Majesty's forces. Some of the London police have lately made themselves acquainted with the drill, and it is to be hoped that the movement will spread throughout the entire force. The acquisition of such knowledge is of incalculable advantage, and the systematic attempt which is being made to introduce the drill throughout the country, for the benefit of all classes, both sexes, and all ages, should surely receive universal support.

The best method of forming a class is first to gain the support of a local medical practitioner, who should be invited to deliver a lecture on the subject. The lecture should be brief and simple in character. It should include : (*a*) a brief description of the air passages and lungs ; (*b*) the reasons why we breathe, and how the process is naturally carried out ; (*c*) an explanation of the best artificial methods of restoring breathing ; (*d*) method of restoring a person rescued from drowning, laying special stress on the importance of clearing the air-passages before beginning artificial respiration.

At the conclusion of a lecture a resolution that a class be formed should be submitted by the chairman, and the date and time of each practice meeting fixed. The classes for land drill should, in the case of women, be held at the house of a

friend, or in the ladies' bath, if there be one ; and in the case of men, in a schoolroom, institute, club-room, gymnasium, or other building. As soon as the members become proficient in the land rescue and resuscitation drills, water-practice should be entered upon at some suitable swimming bath or bathing place. In order to become thoroughly acquainted with the drills, each member should be given an opportunity of acting as instructor. At the beginning of the series of drills the instructor should put the members slowly through the movements, reading out in a loud voice the instructions which follow the commands, so that each member of the class may clearly grasp the meaning of the movements. Each class should be constituted for about fifteen meetings, and an examination for proficiency held at the end of the term.

In the National Life-saving competition, which is open to teams in England, Scotland, Ireland, and the Channel Islands, the teams entering in each year are divided into districts and subdivided into divisions, not fewer than four teams forming a division. The names of each team in each division are then placed in one lot, and drawn in couples at a time. The two teams thus drawn compete against each other and the first drawn has choice of venue. After the first round of ties has been decided, the winning teams are placed in lots in their respective divisions and drawn. They then compete in couples as in the first round, so that a series of divisional competitions may take place simultaneously with the National contest, and also to reduce the expenses incurred by the teams in travelling. As soon as the divisional competitions are finished, the winners are drawn in lots in their respective districts. The district winners are then drawn against each other, until two teams are left in for the final struggle. In each round of the competition, the teams drawn together have simultaneously to go through the drills for rescue practice on land, first, second, third, and fourth methods ; the resuscitation drill (Silvester method) ; and the drills for rescue practice in the water, first, second, third, and fourth methods. The methods of rescue have to be shown at

least twice, so that the knowledge of each individual member of the teams may be tested; whilst in the resuscitation drill the judge can order each man to perform the various duties. The tests should be smartness in executing the various land drills and exercises, neatness in bringing to land, keeping the drowning subject's mouth clear of the water, and general knowledge of resuscitation. A *vivâ voce* examination is also advisable. Every competitor should be required to wear flannel trousers, shoes, and a jersey; in the case of ladies a rowing or gymnastic costume is the best attire. Two judges, not members of either of the competing teams, and a director have to be appointed, whose knowledge of the drills should be unquestionable. The judges are allowed to grant twenty marks for land drills, forty-five for resuscitation, and thirty-five for water drills, deducting marks from the maximum in each class when the work is not done to their satisfaction. The points deducted by the judges are added together, then divided by two, and the total subtracted from the maximum, the team which has the higher number of marks gaining the award.

If it be considered desirable to hold individual instead of team rescue competitions, those entering should be divided into two classes according to proficiency in swimming. Should there be sixteen competitors, eight of the best swimmers should be formed into a squad, their names written on slips of paper and put into a box. The names of the remaining eight should then be placed in another box, and one slip from each box drawn simultaneously. The first two swimmers whose names are drawn should be termed 'No. 1 section,' the second two 'No. 2 section,' and so on, until all the competitors have been formed into sections and heats in the order of the draw. For the purposes of the competition each section should be looked upon as one competitor, the two members of a successful section being each awarded a prize of equal value. The methods of rescue to be demonstrated should be decided by the committee, who should also appoint a judge,

as well as a starter or director. The duties of the latter are to start the men, continue the words of command, and see that each competitor in his turn becomes a rescuer. On the starter's order, 'Heat One—get ready!' the four competitors comprising the two sections (Nos. 1 and 2) in the said heat will form themselves into line at the place appointed for the start, leaving a space between each section.

The starter will now give the commands in the following order:

1. *Number.*—On the word 'number,' the right-hand man of each section will call out 'one,' and the left-hand man 'two.'

2. *Two Deep.*—On the word 'deep,' No. 2 of each section will step behind No. 1.

3. *Second Method—Ready.*—On the word 'ready,' No. 1 of each section will plunge into the water and swim to a mark previously fixed, and remain in line facing the starting-point.

4. *For Rescue—Go.*—On the word 'go,' No. 2 will plunge in and swim to the member of his own section, grip and carry him, according to the prescribed method, back to the starting-point. Both will leave the water and form in line as before, each man in his original place.

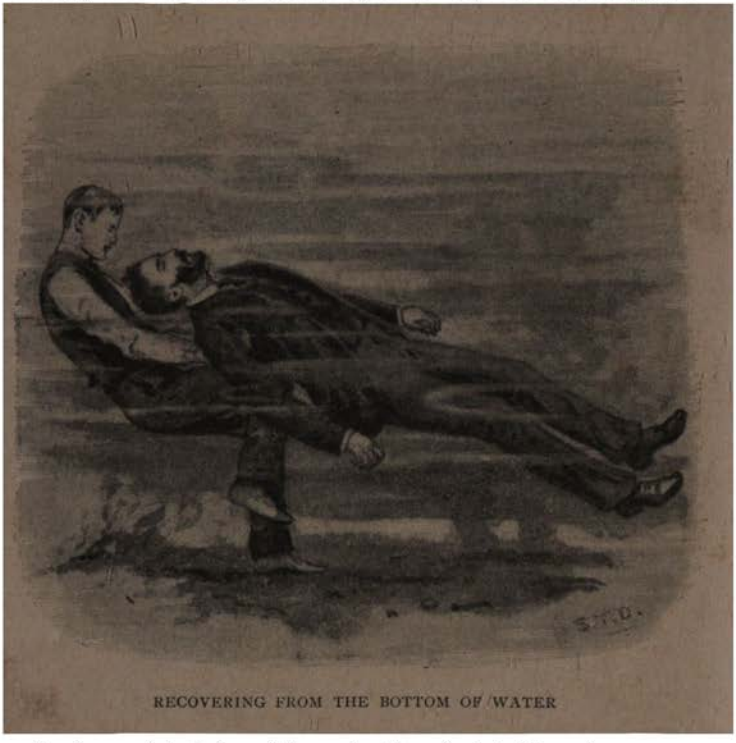
5. *Change Rank—Two Deep.*—On the word 'deep,' No. 1 will step behind No. 2.

The starter should then continue the contest by repeating the commands Nos. 3 and 4, so that each competitor may have an opportunity of demonstrating his ability to rescue before the judge. That official should be particularly careful to watch whether assistance to the rescuer is afforded by the presumed drowning subject, or the mouth of the latter allowed to go under water. As soon as the preliminary heats are completed, the judge should notify his decisions to the starter, who should then draw the winning sections in each heat for the second round, and continue the contest in a similar manner till the final heat is decided.

The old system of letting any swimmer act as a drowning man is radically wrong, because it leaves open the door to favouritism. In many such contests we have seen the supposed

drowning man struggle violently with one competitor, while with another he has been eminently peaceable. It may not have been with the actual thought of destroying the first competitor's chances, but it has resulted in that, all the same.

Another style of contest is that used by the Royal Humane Society for its competitions open to boys at certain public



RECOVERING FROM THE BOTTOM OF WATER

schools and training ships. In the first trial a dummy, or block of wood, is floated on the water, and the boy has simply to fetch it to the starting-point. In the second trial the dummy is weighted and sunk, the spot where it is sunk being indicated. The competitor has to swim to the spot, dive, and bring the dummy to land at a place appointed. The third trial is a

modification of the second, the spot not being indicated, but it is perfectly open for any friend to watch the sinking operation and stand in such a position on the side or bank as to guide a competitor. Apart from this, the dummy system in itself is not of much practical use, and it is far more beneficial and instructive to go through a competition under conditions similar to those which are likely actually to occur than to recover weighted pieces of wood from the bottom of a bath or river. The practice of diving for objects is sufficient for this purpose, because when a person has sunk you can only be guided by the air bubbles which rise to the surface. In running water these will rise diagonally, but perpendicularly in still water. A slight jerk is sufficient to raise the body from the bottom, and the surface will quickly be reached. It is not the fetching up of a body from the bottom which is the difficult part of life-saving, in fact it is mere child's play under ordinary circumstances, compared with the fearful position in which the rescuer is sometimes placed when clutched by the person he is attempting to rescue. Then comes the struggle for dear life. Two lives are in jeopardy, there must be no hesitation or else both will be drowned, and a competition which teaches a man to release himself from such awful peril and still effect a rescue is far more commendable, more sensible, and more practical than any amount of 'dummy' instruction.

CHAPTER VIII

WATER-POLO

THE game of water-polo has perhaps done more during recent years to popularise and to cause an interest to be taken in swimming than any other branch of the sport. It is essentially a game for swimmers, and one that affords no lack of opportunity for the exhibition of skill and the development of staying power. Its practice tends to improve the speed rates of all those who participate in the pastime, as well as to inculcate in the minds of its followers good ideas as to the best methods of obtaining command over the water. In long-distance swims only one style of swimming is, as a rule, adopted, but in water-polo the rapid changes of position which are necessary compel players to constantly alter their style. This is in itself a beneficial phase of the game, and one which teaches a swimmer how complete may become his power.

It was not for this reason, as may be easily imagined, that the game was first promoted, but merely for the purpose of providing something new and attractive at swimming galas; and with this view, on May 12, 1870, a committee was appointed by the Swimming Association, then known as the London Swimming Association, to draw up a code of rules for the management of the game of 'football in the water.' As recently as 1887, in an American work on 'Swimming and Life-saving,' water-polo was described under the heading of 'Ornamental Swimming.' Prior to 1877, various attempts were made by individual swimmers to arrange some kind of ball

WATER-POLO.

game in the water, and at many entertainments and swimming matches what was termed water base-ball was played, the sides usually consisting of not more than three players.

There were a few matches played in 1876, but it is difficult to obtain definite particulars, as but few of them were reported. The Rowing Club at Bournemouth played in that year, and it is interesting to note the method in which these almost prehistoric games were played at a time when most of the present exponents were in the nursery or at school. A newspaper of that period informs us that the Bournemouth Premier Rowing Club carried out the 'first of a series of aquatic hand-ball matches' on Thursday, July 13, 1876, off the pier. Curiously enough, there were seven competitors on each side, and the 'goals were marked by four flags, moored at the west of the pier, 50 yards apart.' After a 'severe struggle,' the ball burst; but the players, nothing daunted, and 'properly habited, displayed their aquatic accomplishments for some time.' A week later, so another newspaper-cutting informs us, 'twelve members of the club proceeded in rowing galleys, and took up a position near their goals, which were marked out by flags describing an oblong of 60 yards by 40 yards. All being ready, an india-rubber ball, evidently the inside of an ordinary football, was placed in the centre between the parties, and a signal given, upon which both crews sprang with commendable agility from their galleys and struck out for the ball of contention.' The report goes on to describe the battle, during which an incident occurred recalling the method adopted under their old rules by the Scotch goal-keepers. One player 'got a lucky hit which sent the ball back from his goal several yards, and it seemed as if his crew were, for a time, to have their own way;' but a player on the other side, 'who, instead of jumping in with his party, in the first instance, remained in his goal as backstock, now plunged in and reinforced his crew, who, after a short but obdurate tussle, turned the tide again in their favour. Again the ball burst, and, another not being forthcoming, the game was suspended.' Among those who were

prominent in play were O. C. Mootham, W. J. and E. Worth, F. T. Cutler, H. Nash, H. Harvey, and J. A. Nethercoate, now highly respected and law-abiding burgesses of the new borough of Bournemouth. In these games it is amusing to note the length of the play, the size of the goals, the thin rubber ball that naturally could not last through the severe castigation it received, and the term 'backstock,' evidently coined from the writer's own imagination.

In the year 1877, before the annual competitions of the Bon Accord Club, which were to be held on the River Dee, the president of the club asked William Wilson, of Glasgow, whether the monotony of racing could not be varied by the institution of a game or competition which would amuse the spectator? The suggestion was acted upon: Mr. Wilson drew up a set of rules for a water game, termed 'aquatic football,' and play took place from bank to bank at the Bon Accord Festival. In the previous year Mr. Wilson drew up some rules for the Aberdeen Club. Later in the same year, the Victoria Baths and the West of Scotland Clubs played a game at the opening of the Victoria Baths. In October of the same year the rules were revised, and a competition extending over two nights was decided at Paisley Baths between the West of Scotland and Paisley Clubs. Paisley were beaten in the first match by one goal to *nil*, but in the return they vanquished their opponents, the score again being one goal to *nil*. The next year the rules were again revised for the Carnegie Club, and after this the West of Scotland paid some attention to the game. There were no goal-posts at first, the ball having to be played between two little flags placed eight or ten feet apart, and the game was merely a rough and tumble scramble from end to end of the field of play. Only soft india-rubber balls were used, and as they were often torn to pieces but little skill could be exercised. Keen followers of the sport soon began to recognise that this new game, if properly developed would prove of immense service to the clubs in general, and they consulted together as to possible improve-

ments. This led to the adoption of goal-posts similar to those used at football, and under these new conditions, in October 1879, at the first costume swimming entertainment ever held in Glasgow, the feature of the meeting was a match between the West of Scotland and Clyde Clubs, the teams consisting, as at present, of seven players each side. Ducking was not prohibited, but standing on the bottom of the bath or throwing with both hands was not allowed.

By this time the English clubs had begun to play a crude style of game, the Birmingham Leander, which was founded in 1877, and the Burton-on-Trent Amateur Club, started the following year, being among the first to adopt the new ball game as a club pastime.

There were no printed rules. The game was played with a small india-rubber hand-ball, about four or five inches in diameter. The goals were the ends of the bath, and the goal-keeper stood on the side; sometimes the captain ordered two goal-keepers, according to the width of the bath. The teams stood at the ends, and the ball was thrown into the centre. In those days the water was not over-clean, and the favourite trick was to place the ball inside the drawers, and swim to the other end, under water. The mode of scoring was to place the ball on the end of the bath with both hands, the forwards sometimes nearly having their neck broken by the goal-keeper jumping on the top of them, and at other times, when trying to score, the goal-keeper would lay hold of their hands and the ball, and drag them out of the water.

Match teams in 1879 consisted of about nine a side. The Dudley S. C. began playing Hanley about that year, and a season or two later the positions were taken after the Association Football system. In 1879 the width of the goals was limited to fourteen feet.

In June 1883, the secretary of the Birmingham Leander journeyed to Portsmouth at the invitation of Mr. Harry Fisk, the secretary of the local club, to confer as to the best methods of creating interest in water-polo, with the result that the

following rules were agreed upon, and a match between Birmingham Leander and All-England arranged. The match was played on August 6, 1883, England winning by a goal to *nil.*

In the following year, England, captained by G. R. Bettinson (Regent), again beat Birmingham Leander by two goals to *nil,* and in 1885 defeated the Midland Counties Amateur Swimming Association by two touch downs to *nil.* The following rules were observed :

1. Duration of game, twenty minutes.

2. Captains to agree or toss for choice of goals.

3. At commencement of play, referee to throw ball into centre of course. All players shall then enter water immediately, except goal-keeper on either side. Goal-keeper may remain out and defend his goal as he may think best.

4. Ball may be passed from one player to another, and carried either on or below surface to goal.

5. No player to interfere with goal-keeper, either in or out of the water, or hold his opponents in any way, unless such goal-keeper, or opponents, are in possession of ball. In case of any player infringing this rule, a free throw to be at once given to his opponents from place where foul occurred.

6. A goal to be obtained by ball being taken up by hand and fairly placed on floating stage, or in boat provided for that purpose.

7. If during play ball goes out of course at side, referee shall immediately throw in same straight from where it goes out; but if it goes out over or upon floating stage or boat, it shall immediately be taken up and thrown into play by goal-keeper upon stage or boat.

8. Umpires, or one of them, shall blow whistle immediately after a goal has been obtained, and play shall cease from that moment.

9. Teams to change goals at half-time.

10. Should any competitor who has been selected to take part in polo match fail to engage in same, he shall forfeit all prizes that at time of holding such match he may have already won at this festival, as well as any he may afterwards become entitled to in connection with same.

11. Power given to umpires, or, in case of dispute, to referee, to decide all circumstances not provided for by these rules.

A glance at these rules will show that they were most primitive in conception, especially Rule No. 10, and very simple as compared with those at present in vogue. A goal was obtainable by placing the ball on the end of the bath, or on a floating stage in the water. Although simple, they very nearly led to a fatal accident at Portsmouth, because it was necessary, in order to obtain a goal, for a team to press down in full force with one of the players holding the ball, the rest of his team round closing him so as to prevent the ball being secured by the opposing side. The ball was not allowed to be thrown, the players having to swim with it in their hands, or push it in front of them. The occasion on which Mr. J. L. Mayger —now the President of the Midland Counties Swimming Association and a well-known Rugby footballer—nearly lost his life was in the second match between England and Birmingham Leander. A fierce struggle took place near the Leander goal, which was a heavy pontoon moored against the side of a gun-boat. The tide was flowing in that direction, and Mr. Mayger, who was playing for England, was in a scrimmage pushed beneath the surface and under the pontoon. The rest of the swimmers, in their frantic endeavours to gain a goal, prevented him from getting clear. It was only when nearly insensible that his rescue was effected.

In the meantime, an attempt had been made by Mr. W. Henry to induce the English Association, then styled the Swimming Association of Great Britain, to recognise the game, and to formulate a set of rules for general use among clubs, as certain individual clubs were making rules of their own. No support was accorded to the proposition, and, as a matter of fact, only the proposer and seconder voted in favour of it. The Midlanders were, however, keen on the subject, and on May 20, 1884, a meeting of the clubs in the district was held at Burton-on-Trent, and a resolution was adopted to the effect that a Midland Counties Swimming and Aquatic Football Association be formed, the chief object being the promotion of the game of water-polo in the Midlands. This decided action induced

the Swimming Association of Great Britain to reconsider their determination, and in 1885 they passed the following set of rules, and recognised the game as being under their jurisdiction :

1. Each side shall be represented by not less than six players.

2. Each side shall wear caps of a distinctive colour. The width of goal to be 10 feet, marked by flags. The ball to be not less than 8 inches in diameter.

3. The duration of the game not to exceed twenty minutes; one minute allowed at half-time to change ends.

4. The captains shall agree or toss for choice of goals.

5. Each side shall appoint an umpire; a referee shall also be appointed. The decision of the umpires in all questions of fact to be final; but in the case of the umpires disagreeing, then an appeal shall be made to the referee, whose decision shall be final; the referee shall also act as time-keeper.

6. The players shall enter the water and place themselves in line at their respective goals. A player leaving the water shall take no further part in the game.

7. The referee shall stand in a line with the centre of the course, and, after ascertaining that the captains are ready, shall give the word 'Go!' at the same time throwing the ball into the centre.

8. The umpires shall take their stand at each end of the course and follow the game silently; a goal or foul to be declared by whistle.

9. The ball may be passed from one player to another, and carried either on or below the surface.

10. A goal to be obtained only by the ball being taken up by hand and fairly placed on the goal line, which may be the end of a bath, floating-stage, pole, or plank.

11. No player to interfere with the goal-keeper, or hold his opponents in any way, unless they are in possession of the ball or touching it.

12. All players must stop in their places directly the whistle is sounded by either of the umpires.

13. When the ball by any chance shall go out of play, it shall be thrown in a straight line into the middle of the course, by the referee, from the place where it went out. A player throwing the ball over his own goal-line shall concede a corner thrown to his

opponents; but if the attacking party throw the ball over, the goal-keeper shall return the ball in a direct line from where it went out.

14. No player shall be placed in his opponents' goal.

15. In case of a foul (such as Rule 11), the opponents to have a free throw from the place where the ball is at the time the foul occurred.

The Midland rules at that time were almost similar, but for the purposes of comparison, as well as a record, they are here given:

1. Each side shall be represented by eight players.

2. The duration of a game shall be twenty minutes.

3. The sides shall be distinguished by the players wearing red and white caps respectively, and each side shall have two flags to correspond with their colours, which shall be fixed at the end of the bath. The width of the goal to be 12 feet; size of ball 9 inches in diameter.

4. The captains shall agree or toss for choice of goals.

5. Each side shall appoint an umpire. A referee shall also be appointed by the Association, whose decision in case of dispute shall be final.

6. At the commencement of play the referee shall stand at the centre of the side of the bath, he shall then blow his whistle to signify to the captains to get ready, and, after ascertaining that the captains are ready, he shall give the word 'Go!' at the same time throwing the ball into the centre of the bath. The umpires must take their stand, one at each end of the bath, and shall follow the course of the game silently, goal or foul to be declared by whistle. Any time occupied in dispute (not exceeding five minutes) shall be added to the length of the game.

7. All players shall enter the water immediately at the commencement of the game, and remain in the water.

8. No player shall be allowed to hold an opponent, unless such opponent shall be in possession of the ball (touching it in any way). In case of any player infringing this or the preceding rules, a foul shall be at once given against his side, and his opponents shall be allowed a free throw from the place where the foul shall have occurred.

9. A goal shall be obtained by the ball being taken up by the hand and fairly 'placed' on the path at the end of the bath between

the flags. Where this is not practicable, the ball must be 'placed' against the end.

10. When the ball by any chance shall go out of play over the side of the bath, the same shall be thrown in a straight line by a player of the opposite side, from the place where it went out. A player throwing the ball over his own goal-line shall concede a corner throw to his opponents; but if the attacking party throw the ball over, the goal-keeper (or one of the opposite side) shall return the ball in a direct line from where it went out. No player may be 'placed' in his opponents' goal.

11. The teams shall change ends at half-time.

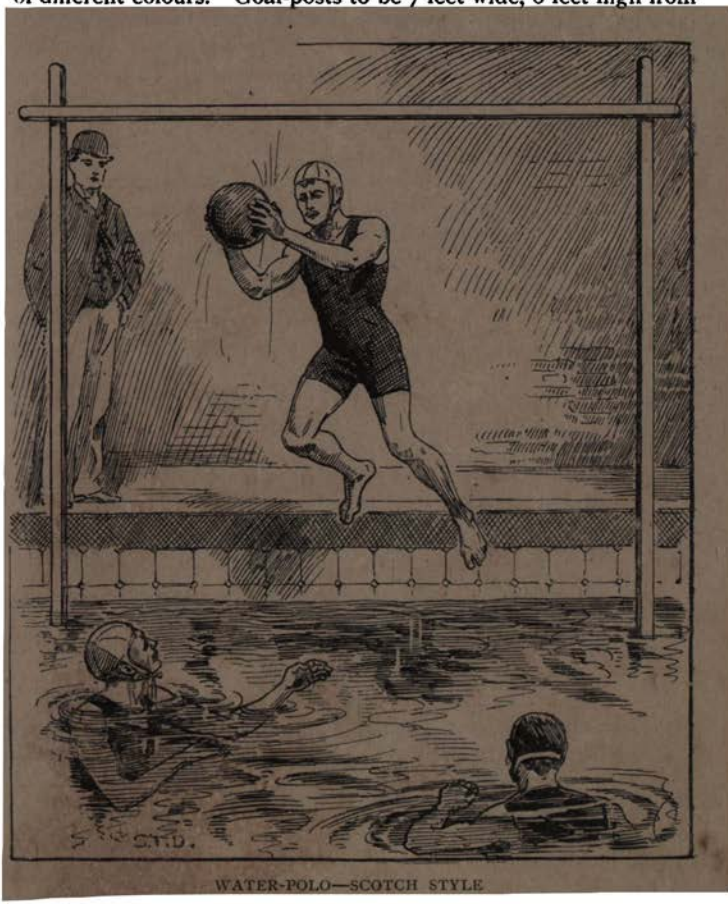
12. Any of the foregoing rules may be altered or amended, or new rules made, by the Midland Counties Association, at a meeting specially convened to consider and decide the same.

Various alterations were from time to time made until the Midlanders, like the Scotch clubs, adopted goal-posts, when their play at once improved, and the winning of a game began to depend more on the skill of the team than its combined brute force. The Midland goal-posts were only a few inches high, just sufficient to allow of the ball being put through.

While the English clubs had been gradually improving their system of play, the Scotch clubs had not been idle, and upon the formation of the Associated Swimming Clubs of Glasgow (now practically the western local centre of the Scottish Amateur Swimming Association), a committee was appointed to draft a set of rules for the proper conduct of the game, and a cup was presented for competition amongst the affiliated clubs. This contest was first decided in 1886, and as none other of its character was held in Scotland, it was to all intents and purposes the Scottish aquatic football championship. The first team to win the cup was that representing the old West of Scotland Club, who beat South Side in the final tie by one goal to love, the winning team consisting of W. Clark, captain, Stanley Priestley, J. Stevenson, G. S. Bryson, F. Williamson, J. Dickie, and A. Cooper, goal. The games were played under the following official rules of the Glasgow organisation :

1. The play to last fourteen minutes, with teams of seven a-side. Teams to change ends at half-time.

2. The teams shall be distinguished by the players wearing caps of different colours. Goal-posts to be 7 feet wide, 6 feet high from



WATER-POLO—SCOTCH STYLE

the surface of the water, and fixed 2 feet 6 inches from end of pond. The ball to be 26½ and not more than 28½ inches in circumference.

3. The captains shall agree or toss for choice of ends. Each side shall appoint an umpire, and a referee shall be appointed by

mutual agreement, whose decision in all cases of dispute shall be final.

4. At the commencement of the play the referee shall stand at the centre of the side of the bath, and shall then blow a whistle to signify to the captains to get ready, and after ascertaining that they are ready, he shall give the word to go, at the same time throwing the ball into the centre of the bath.

5. All players, with the exception of goal-keeper, shall enter the water immediately at the commencement of the game, and remain in the water while the ball is in play.

6. No player shall be allowed to duck an opponent unless such opponent shall be in possession of the ball; no holding or pulling back of any opponent, nor (with the exception of goal-keeper) playing the ball with both hands.

7. A goal shall only be scored when the ball has been thrown or placed between the goal posts under the bar. Fouls to be declared by whistle; goals, half-time, and time to be declared by bell.

8. No player (with exception of goal-keeper) shall be allowed to stand on bottom of bath while playing the ball.

9. A goal-keeper throwing the ball past the centre of the pond shall concede a free throw to his opponents. The free throw to be taken from the centre of either side of the bath.

10. Should the opposing team throw the ball over the end of the bath, the goal-keeper shall have a free throw from goal; but should the defending team do so, they shall concede a corner throw.

11. No player shall be allowed to play the ball while holding on by the rail.

12. Any infringement of Rule 6, 8, or 11 shall be considered a foul. In the event of a foul being declared against any player, his opponents shall be allowed a free throw in any direction, from the side of the bath nearest to where the foul shall have occurred. A goal shall not be scored from a free throw, unless the ball has touched another player before going between the goal-posts. When a goal has been scored, the time from the scoring of the goal to the re-starting of the game, or any time lost in dispute, shall be added to the game.

Very little progress was made until the end of 1887, as the English governing body was, during the years 1884–5 and 6,

engaged in perpetual wrangles as to the meaning of the amateur definition, but early in 1888 a committee was appointed, consisting of Mr. T. Young (Richmond), Mr. H. G. Hackett (Pacific), and the authors of the present volume, to revise the laws and compile a set of conditions for water-polo championships. Their report, presented in April 1888, was unanimously adopted. The new laws provided that goal-posts 8 feet wide, with a crossbar 6 feet above the surface of the water, and fixed at least one foot from the end of the bath, should be used, and that the player should be actually swimming when passing or playing the ball. For the first English championship the entries were not numerous, but this was only to be expected, as the expenses of travelling had to be borne by the individual players, who, in most cases, were mere youths, not overburdened with cash. Since then the institution of the county and district competitions has tended still further to diminish the number of clubs anxious to compete for championship honours; but, undoubtedly, the question of expense is an effectual deterrent with many. Swimming cannot, by reason of the lack of accommodation for spectators at baths, be made to pay sufficiently well to defray the cost of visiting teams travelling long distances, and the burden therefore falls upon the clubs who happen to be unsuccessful in the draw for choice of venue.

After the decision of the preliminary rounds the Otter, Tadpole, and Nautilus (London), and the Burton-on-Trent Amateur Clubs were left in the semi-final round. Nautilus were defeated by Burton by one goal to *nil*, and as the Tadpoles scratched, the famous Otter and the crack Midland combination were left in for the final. They met at the Lambeth Baths, the game ending in an easy win for the Midlanders.

These games were very carefully watched, and the new style of play freely criticised. As an immediate result, a committee of experts was appointed to revise the laws, as it was generally conceded that some of the conditions imposed were

absurd, as well as being capable of lending themselves to two or three different constructions. A voluminous correspondence was carried on between all the important clubs and organisations in the kingdom, with the result that the following rules were eventually adopted :

1. *Ball.*—The ball to be an Association football (No. 3), and to be not less than 8 nor more than 9 inches in diameter. The ball to be furnished by the home team.

2. *Goals.*—The width of the goals to be 10 feet, the crossbar to be 3 feet above the surface of the water in the deep end of the bath, and 5 feet in the shallow end. If in deep water (i.e. exceeding 5 feet in depth) both crossbars to be 3 feet above the surface. The posts to be fixed at least 1 foot from the end of the bath. The distance between the goals shall not exceed 30 yards, nor be less than 20 yards. The goal-posts to be furnished by the home team.

3. *Depth.*—The water shall not be shallower than 3 feet.

4. *Teams.*—Each side should consist of not less than 7 players, who shall wear caps of distinctive colour, and drawers or costumes.

5. *Time.*—The duration of the match should be 20 minutes—10 minutes each way. Three minutes to be allowed at half-time for change of ends. Time occupied by disputes shall not be reckoned as in the time of play.

6. *Captains.*—The captains shall be playing members of the teams they represent ; they shall agree upon all preliminaries, and shall toss for choice of ends. If they are unable to agree upon any point, the referees shall decide for them.

7. *Officials.*—The officials shall consist of a referee (assisted by a timekeeper) and two goal judges.

8. *Referee.*—The referee's duties shall be to start the game, to stop all unfair play, to decide upon all fouls, and to see that these rules are properly carried out. He may proclaim a foul without its being claimed by any of the competitors. The referee's decision is final (note Rule 13 Championship Conditions).

9. *Goal Judges.*—The goal judges shall stand at each end of the bath, and shall decide upon the scoring of goals at their respective ends only, and shall denote a goal by means of a flag. They shall not change ends.

10. *Declaring Fouls.*—The referee shall declare a foul by blowing a whistle, upon which the competitors shall remain in their

respective positions until the colours of the side are exhibited to which the free throw is awarded.

11. *Fouls.*—It shall be a foul—

(*a*) To touch the ball with both hands at the same time (goal-keeper exempted from this rule).

(*b*) To touch the ball, interfere with an opponent, or take any part in the game whilst standing on the bottom of the bath; the goal-keeper exempted.

(*c*) To hold the rail or side of the bath during any part of game, unless for the purpose of resting.

(*d*) To interfere with an opponent unless he is playing or holding the ball.

(*e*) To carry the ball under the arm.

12. *Penalties.*—The penalty for each foul shall be a free throw to the opposing side from the place where the foul occurred. A goal cannot be scored from a free throw unless the ball has touched at least one other player.

13. *Wilful Fouls.*—If in the opinion of the referee a player commits a wilful foul, he shall be cautioned for the first offence, and for the second the referee shall have power to order him out of the water until a goal has been scored.

14. *Goal-keeper.*—The goal-keeper may stand to defend his goal, but when standing he must not throw the ball beyond half distance; the penalty for doing this shall be a free throw to the opposing side from the half-distance. Goal-keeper is exempt from clauses (*a*) and (*b*) in Rule 11, and he may be treated as any other player when in possession of the ball.

15. *Scoring.*—A goal shall be scored by the ball passing between the goal-posts and under the crossbar.

16. *Leaving the Water.*—A player leaving the water in which the match is being played, except at half-time, shall not re-enter it until a goal has been scored, or until half-time.

17. *Starting.*—The players shall enter the water, and place themselves in a line with their respective goals. The referee shall stand in a line with the centre of the course, and, having ascertained that the captains are ready, shall give the word 'Go,' at the same time throwing the ball into the water at the centre.

18. *Out of Play.*—When the ball shall go out of play, it shall be thrown by the referee into the middle of the course, in a straight line from where it went out.

19. *Goal-Line and Corner Throws.*—A player throwing the ball

over his own goal-line shall concede a free corner throw to his opponents; but if the attacking side throw the ball over, it shall be a free throw to their opponents.

20. *No Player to be placed in Opponents' Goal.*—No player to be placed in his opponents' goal, or behind the goal-keeper while the ball is in front of the goal-keeper. Infringement of this rule is a wilful foul.

The height of the goal-posts was decreased, especially in the deep end, and the width of goals increased. The office of umpire was abolished, and that of goal judge substituted, whilst the referee was granted further and far more stringent power in dealing with the players than heretofore. Goal-keepers were prohibited from throwing the ball more than half the length of the bath when standing, and carrying the ball under the arm was disallowed.

Then followed a wonderful development in the game, more especially in the South, primarily due to the formation of the London Water-Polo League, a body whose sole object is to advance the game in every possible way.* It has no legislative powers, and is affiliated to the Amateur Swimming Association.

A meeting of London clubs was called in 1889 by Mr. A. Sinclair, and, although but sparsely attended, it was determined to found a League for London and district, the convener of the meeting acting as hon. secretary for the three succeeding seasons. The promoters felt quite satisfied that the matter would be properly taken up, but they were more than surprised to find that when the entries for the first competition closed no fewer than twenty-one clubs had affiliated. The competition was not carried out on the League principle, but by the ordinary method. Nautilus beat Otter in the final tie by two goals to *nil*. The work of the League was not by any means confined to the mere holding of a competition. It drew up a set of instructions for referees, arranged inter-town matches, and, what is more important than all, started the now popular county games.

The first county match under its auspices—Middlesex *v.*

Surrey—was played at the annual gala of the Tadpole Club, held at Kensington on September 18, 1889, Middlesex winning by five goals to love. Through the League, a much better feeling than had previously existed was engendered among metropolitan swimming clubs, and the game was taken up strongly in the southern counties. This caused frequent discussions among players as to the different styles of play then in vogue in England, and in March 1890, at the annual general meeting of the Midland Counties' Association, a body whose membership was smaller than that of the League, the old Midland aquatic polo rules were discarded, and those framed by the A.S.A. adopted. As the Northern Association had, soon after its formation, accepted the National rules, and thereby abolished several local styles of play, the desired consummation—one system of play for the whole of the clubs in England—was arrived at.

As may be naturally imagined, the Scotch clubs had not been idle. They had gradually improved their rules, making the game more scientific and less rough; but, although the majority simply played under one set of conditions, the inventive Edinburgh League, and one or two similar organisations, made local alterations. The official rules were the following:

1. The play to last 14 minutes, with teams of 7 aside. Teams to change ends at half-time.

2. The teams shall be distinguished by the players wearing caps of different colours. Goal-posts to be 7 feet wide, 6 feet high from the surface of the water, and fixed 2 feet 6 inches from the end of pond. The ball to be 26½ and not more than 28½ inches in circumference.

3. The captains shall agree or toss for choice of ends.

4. Each side shall appoint an umpire, and a referee shall be appointed by mutual agreement, whose decisions in all cases of dispute shall be final.

5. At the commencement of the play the referee shall stand at the centre of the side of the bath, and shall then blow a whistle to signify to the captains to get ready, and after ascertaining that they are ready he shall give the word 'Go,' at the same time throwing the ball into the centre of the bath.

6. All players, with the exception of goal-keeper, shall enter the water immediately at the commencement of the game, and remain in the water while the ball is in play.

7. No player shall be allowed to duck an opponent unless such opponent shall be in possession of the ball; no holding or pulling back of any opponent, nor (with the exception of goal-keeper) playing the ball with both hands.

8. A goal shall only be scored when the ball has been thrown or placed between the goal-posts under the bar.

9. Fouls to be declared by whistle; goals, half-time, and time to be declared by bell.

10. No player, with the exception of goal-keeper, shall be allowed to stand on bottom of bath while playing the ball.

11. A goal-keeper throwing the ball past the centre of the pond shall concede a free throw to his opponents. The free throw to be taken from the centre of either side of the bath.

12. Should the opposing team throw the ball over the end of the bath, the goal-keeper shall have a free throw from goal; but should the defending team do so, they shall concede a corner throw.

13. No player shall be allowed to play the ball while holding on by the rail.

14. Any infringement of Rules 7, 10, and 13 shall be considered a foul. In the event of a foul being declared against any player, his opponents shall be allowed a free throw in any direction from where the foul took place. A goal shall not be scored from a free throw unless the ball has touched another player before going between the goal-posts. When a goal has been scored, the time from the scoring of the goal to the re-starting of the game, or any time lost in dispute, shall be added to the game.

For open water the rules as to goals and goal-keeper were the same as in England.

The Edinburgh League began active work in December 1890, and its matches were carried out with success right through the succeeding winter. All its games were conducted after the racing was over for the year, as the accommodation in Edinburgh was then, and is now at the time of writing, but meagre. Their rules differed somewhat from those adopted by the Scottish Association, the principal differences

being as follows :—When a goal was scored, instead of lining up at their respective ends, the teams took up their positions, the forward lines being three feet from the centre of the pond, and when starting the ball the centre forward of the team against whom the goal had been scored had the throw-off, but had to pass to either wing, and not back. Ten clubs took part in the first competition, but this number was decreased to eight in the second year.

The Irish clubs in Dublin and Belfast had two different sets. That at Belfast was an amalgamation of the English and Scotch rules, but those adopted by the Sandycove and Blackrock Clubs were totally different, the swimmers not being allowed to throw the ball at goal, but being required to place it between two painted marks. At the start the players took up their positions, and the ball was hit off from the centre by the side losing the toss for choice of ends.

In the year 1890 the London League greatly extended its sphere of action, and arranged matches between Middlesex and Surrey, Kent, Sussex, and Hants. This was the direct cause of the formation of county associations, the rise and progress of which will be dealt with later.

The League was also desirous of playing Glasgow, and instructed its secretary to try and arrange the meeting. Through error application was made to the central body of the Scottish Swimming Association instead of to its Western local centre. The Scotch council were entirely in accord with the movement, but wanted an international rather than an inter-town match. As a result, the first international match between England and Scotland was arranged. It was played at Kensington Baths on July 28, 1890, the teams being as follows :—

England.—F. Browne (Burton-on-Trent), goal ; W. G. Carrey (Amateur), and H. F. Clark (Stroud Green), backs ; J. F. Genders (Nautilus), half-back ; J. Finegan (Liverpool Sefton), W. Henry (Zephyr), and J. L. Mayger (Burton-on-Trent), captain, forwards.

Scotland.—C. W. Donald (Edinburgh University), goal ;

G. S. Bryson (Dennistoun), and S. D. Cawood (Victoria), backs ; A. Strauss (Southern), captain, half-back ; J. Bissland (Leander), A. Whyte (Victoria), and S. Capie (Dennistoun), forwards.

The English rules were used, but the Scotchmen ably demonstrated that their style of play was the better. They did not indulge in the ducking tactics so common with their opponents, and were far smarter in playing the ball. It was evident that the English 'ducking' rule was not stringent enough, and that the Scotch game was far superior as an exhibition of scientific and fast play. It was very often impossible for a player, no matter how fairly he might wish to act, to prevent fouling his opponent, because he could not always tell whether his opponent had the ball in his possession or not. The Scotchmen did not trouble about this in the least, but simply went for the ball, avoiding ducking in every instance. Another difficulty was the continued holding of a player after the ball had left his possession. When a player legally tackled took the ball under the water, it very often happened that in the succeeding struggle the ball was released, but that the tackler, not knowing this, still held on, and as a consequence had a foul awarded against him. In the shallow end of the bath the Englishmen repeatedly infringed the rule prohibiting standing when playing. It is, of course, hard to avoid standing in the shallow end of a bath, but the leaping from the bottom at the ball was so palpable an infringement that the onlookers quickly acknowledged that the Scotch game was better than that in vogue in England. From this it will be seen that, although England had made far more rapid strides than the sister country in the promulgation of the pastime, the Scotchmen had developed and improved their rules to such an extent as to make their passing and swimming powers far superior to that of the best combination England could bring together. The Englishmen were far heavier and speedier than their opponents, but were sadly lacking in skill and strategy. They suffered defeat by four goals to *nil.*

The English championship of 1890 again obtained a meagre entry, but the pick of the English clubs were engaged. As already mentioned, Burton won in 1888, the year of the institution of the contest, and as in the succeeding year they again won, beating Hanley in the first round by two goals to love, Nautilus in the semi-final by three goals to love, and Amateur in the final by two goals to love, their victory for the third successive year was confidently expected. They, however, suffered defeat in the final at Birmingham, Hanley winning by six goals to love. The absence of some of their best players may have been the cause of such a crushing defeat, but it was the opinion of good judges that Hanley would have won in any case.

The Manchester League was formed in March of this year, the A.S.A. rules being at once adopted as those to be used by the clubs engaged in its competitions. Mr. Herbert Dean was elected secretary, and in a very short time the League was at work. The system during the first year was to play one match against each other club entered, the choice of bath being drawn for. Mayfield, Gorton, Osborne, Swan, Leaf Street, Chalmers, Tyldesley, Stalybridge, Oldham Seal, and Stretford were the clubs that constituted the League, but the Swan Club afterwards withdrew, because the League ruled against them over a protest and the Y.M.C.A. thereupon undertook to play all their matches. The Mayfield Club won the League championship after being victorious in every game, and scoring eighty-five goals as against seven scored by their opponents. England again suffered a reverse in the International match, which was played at Glasgow in October 1891, under the rules of the Scotch Association ; but the defeat served a good purpose in the interests of the pastime, as the officials of both bodies then attempted to assimilate the two codes, and in April of the following year, 1892, an international conference was held at Liverpool, the delegates being G. H. Barker (Liverpool), chairman, A. Thomson (Manchester), H. Thomsett (Leicester), A. J. Foster (Birmingham), and the writers as representing England,

Loudoun Hamilton (Glasgow), A. Graham (Glasgow), and J. Lamb (Edinburgh League), representing Scotland. Prior to the meeting of the conference, the Midland, Northern, and Southern Associations had agreed to a revised set of rules, and these were submitted to the meeting at Liverpool. The Scotch style of play was adopted almost in its entirety, as well as their time-keeping rule, aimed at the prevention of a system of winning by delay, which had become too common in England. The great fight was over the goal-posts, but after a long discussion those in vogue in England were accepted by the International Board on a division. The opposition came from the Scotch Association, under whose rules goal-keepers stood on the side of the bath to defend their goals, and as the substitution of the English rule entirely altered the play of their men, it was natural that the subject should occasion prolonged argument. The English delegates ably maintained that in a swimming game the players should be swimming, and not standing on the side of the bath. In the course of the next few months the recommendations of the International Board were considered by the governing associations, and unanimously accepted by them. The assimilated code was as follows :

AMATEUR SWIMMING ASSOCIATION WATER-POLO RULES REVISED 1892

1. *Ball.*—The ball to be an Association football, fully inflated, and to be not less than 26½ inches nor more than 28½ inches in circumference. The ball shall be furnished by the home team, and no oil, grease, or other objectionable substance shall be placed on it.

2. *Goals.*—The width of the goals to be 10 feet, the crossbar to be 3 feet above the surface when the water is 5 feet or over in depth, and to be 8 feet from the bottom when the water is less than 5 feet in depth. The goal-posts to be furnished by the home team.

3. *Field of Play.*—The distance between the goals shall not exceed 30 yards nor be less than 19 yards, the width shall not be

more than 20 yards, and the goal-posts shall be fixed at least one foot from the end of the bath or any obstruction.

4. *Depth.*—The water shall not be shallower than 3 feet.

5. *Time.*—The duration of the match shall be 14 minutes, 7 minutes each way. Three minutes to be allowed at half time for change of ends. When a goal has been scored, the time from the scoring of the goal to the re-starting of the game, or time occupied by disputes or fouls, shall not be reckoned as in the time of play.

6. *Officials.*—The officials shall consist of a referee, time-keeper, and two goal-scorers.

7. *Referee.*—The referee's duties shall be to start the game, stop all unfair play, decide in all cases of dispute, declare fouls, goals, half-time, and time, and see that these rules are properly carried out. He may proclaim a foul without its being claimed by any of the competitors, and shall decide upon and declare all goals, whether signified or not. The referee's decison is final.

8. *Goal-Scorers.*—The goal-scorers shall stand at the side near each goal, and when they consider that the ball has passed through the goal, at their respective ends only, they shall signify the same to the referee by means of a flag. They shall not change ends, and shall keep the score of goals of each team at their respective ends.

9. *Teams.*—Each side shall consist of not more than seven players, who shall wear caps of distinctive colour, and drawers or costumes. In baths no grease, oil, or other objectional substance shall be rubbed on the body.

10. *Captains.*—The captains shall be playing members of the teams they represent; they shall agree upon all preliminaries, and shall toss for choice of ends. If they are unable to agree upon any point, the referee shall decide for them.

11. *Starting.*—The players shall enter the water and place themselves in a line with their respective goals. The referee shall stand in a line with the centre of the course, and, having ascertained that the captains are ready, shall give the word 'Go,' and immediately throw the ball into the water at the centre. A goal shall not be scored after starting or re-starting until the ball has touched more than one player.

12. *Scoring.*—A goal shall be scored by the entire ball passing beyond the goal-posts and under the crossbar.

13. *Fouls.*—It shall be a foul—

(*a*) To touch the ball with both hands at the same time.

(*b*) To hold the rail or side during any part of the game.

(*c*) To stand on or touch the bottom during any part of the game, unless for the purpose of resting.

(*d*) To duck an opponent unless he is holding the ball, or to retain possession of the ball when ducked.

(*e*) To jump from the bottom or push from the side (except at starting or re-starting) in order to play the ball or duck an opponent.

(*f*) To hold, pull back, or push off from an opponent.

(*g*) To turn on the back and kick at an opponent.

14. *Penalties.*—The penalty for each foul shall be a free throw to the opposing side from the place where the foul occurred. A goal cannot be scored from a free throw unless the ball has touched at least one other player.

15.—*Wilful Fouls.*—If, in the opinion of the referee, a player commits an ordinary foul wilfully, he shall be cautioned for the first offence, and for the second the referee shall have the power to order him out of the water until a goal has been scored. It shall be a wilful foul to start before the word 'Go,' to deliberately waste time, or for a player to take up a position within a yard of his opponents' goal.

16. *Declaring Fouls.*—The referee shall declare a foul by blowing a whistle and exhibiting the colour of the side to which the free throw is awarded, whose captain may appoint any player to take the throw from where the foul occurred. The other players shall remain in their respective positions from the blowing of the whistle until the ball has left the hand of the player taking the throw.

17. *Goal-keepers.*—The goal-keeper may stand to defend his goal, and must not throw the ball beyond half-distance; the penalty for doing so shall be a free throw to the opposing side from half-distance at either side of the field of play. Goal-keeper is exempt from clauses (*a*), (*c*), and (*e*) in Rule 13, and he may be treated as any other player when in possession of the ball.

18. *Goal-line and Corner Throws.*—A player throwing the ball over his own goal-line shall concede a free corner throw to his opponents, but if the attacking side throw the ball over, it shall be a free throw to their opponents' goal-keeper.

19. *Out of Play.*—Should a player send the ball out of the field of play at either side, it shall be thrown in any direction from where it went out by one of the opposing side, and shall be considered a free throw.

20. *Declaring Goals, Time, &c.*—The referee shall declare half-time and time by whistle ; goals by bell.

21. *Leaving the Water.*—A player leaving the water, or sitting, or standing on the steps, or on the side of the bath in which the match is being played, except at half-time or by permission of the referee, shall not re-enter it until a goal has been scored, or until half-time. Should a player leave the water, he can only re-enter it at his own goal-line.

Next in importance to the work of the various Leagues comes that of the county associations, whose delegates have now become a powerful factor in water-polo circles. Undoubtedly the most energetic has been the Surrey County Association, which was formed in 1890, under the presidency of J. F. Genders. It at once took the lead in activity among the other counties. The affairs of the Association are conducted by a committee, elected annually by the delegates of the affiliated clubs, and individual members of the Association. Besides arranging matches with the other counties and the Universities, a large number of matches are played annually in different districts in the county, for which teams are nominated by the Association. This is for the purpose of giving the officials an opportunity of finding out and giving practice to young and comparatively unknown players.

In addition to these matches, an inter-club competition, open to all amateur clubs in the county, is carried out each year on the League principle, each club playing the others.

The Association does not confine itself merely to the propagation of water-polo, but interests itself on behalf of swimming and swimming clubs in the county, using its efforts to get schools to take a greater interest in swimming and water-polo, and also advocating the adoption of the Public Baths and Washhouses Acts in suitable districts.

The first county match played by Kent was one arranged by the London League at Tunbridge Wells, the opposing county being Middlesex. It was played on July 26, 1890, the

home county, which was almost entirely composed of members of the Tunbridge Wells Cygnus Club, winning by four goals to three. This success caused the honorary secretary of the Cygnus Club to endeavour to form a county association ; but the Kentish clubs did not respond very readily, and for another season the Cygnets had to carry on the work almost unaided, but they were so successful that at the end of the season the other clubs rallied round, and the Kent County Water-Polo Association was established, E. J. Plumbridge (Tunbridge Wells) being captain. Since its formation it has done good work, and large crowds have gathered at Tunbridge Wells to witness its matches. Many new players have been unearthed by means of a challenge shield competition for affiliated clubs, won the first year by Tunbridge Wells ; and there is reason to believe that, although the officials have greater difficulties to contend with in raising teams than the really metropolitan counties, whose men are always at hand, Kent will make and maintain a leading place in county water-polo.

Of Sussex there is little to be said. They formed a county association in 1891, lost all their matches, and with their losses apparently all heart.

The Middlesex County Water-Polo Association was started in April 1891. Its players were then at the head of the counties, and have remained so until the present time. Like the Surrey Association, it arranges matches with Kent, Hants, and Surrey regularly, but has not met the Universities. Its first captain was W. Henry, of the Zephyr Club, and A. Hudson, Amateur, acted as secretary. During its first season as a properly constituted county association its representatives scored 36 goals, as against 6 obtained by their opponents; but in 1892 this goal record was lowered considerably, owing to improvement in the play of the other counties. Surrey almost grasped the lead from them, but an unlucky defeat by Hants robbed them of the honour. By affiliating to the London League, it was granted a direct seat on the executive of that body ; and as a like privilege was accorded to Surrey County,

the League committee has become an organisation of experts. They have no legislative power, and are compelled to take all questions as to alterations of rules to the A.S.A., but their opinions hold a great weight in the South, and it may be safely assumed that anything brought forward by them represents the feeling of a large section of Southern water-polo players.

The rise of water-polo in Hampshire was for a time retarded by the absence of properly constructed swimming-baths. As previously stated, a ball game in the open sea was played off the old pier at Bournemouth as long back as 1876, but it was not until 1891—fifteen years later—that the Hampshire Water-Polo Association was formed, and by a most curious coincidence both events took place on the same date—July 13. The town of Bournemouth is situated on one of the most exposed portions of the Hampshire mainland coast-line, so that there has never been much inducement or incentive to the game there. For some reason or other, a long break of nearly nine years elapsed before anything further was heard of 'aquatic hand-ball' on this part of the coast. In 1885 it was revived by members of the Bournemouth Amateur Rowing Club, who had added a swimming section to the club, and occasional games were carried out in the sea at a depth varying from eight to thirty feet of water, the ball used being a large india-rubber one, such as could be bought in a toyshop. A rival rowing-club was about then started at Boscombe, an east suburb of the town, and W. Pickford, captain of the Bournemouth Club swimming section, and H. Bazalgette, captain of the Boscombe Club, son of the late Sir Joseph Bazalgette, the eminent engineer, drew up a code of regulations. Considering that none of the local swimmers had any knowledge that the game was being played in any other part of the country, and were almost under the impression that they were making a new game entirely, the rules agreed upon compare in a most interesting manner with the present conditions under which the game is played, and which were not generally adopted

until about 1891. The regulations were that not less than six players should be on each side, that the goals should be ten yards wide, and the ball not less than eight inches in diameter. The game was to last twenty minutes, players were to start in a line with their respective goals, and any player leaving the water was to take no further part in the game. A referee and two umpires were to be appointed. The former had to start the game, having ascertained that the captains were ready, by uttering the word 'Go,' and throwing the ball into the centre. His only other duty was to act as timekeeper, and to decide between the umpires if they disagreed. The umpires were stationed at each goal, and were to declare the scoring of a goal, or a foul, by the sound of a whistle. A further stipulation prevented any player from grasping or throwing the ball, interfering with the goal-keeper, or holding an opponent in any way; and at the sound of the whistle every player was to remain in his place without moving. A player was 'off-side' unless he had two opponents in front of him; the penalty for a foul was a free throw to the other side; and when the ball went out of play the referee had to throw it into the centre of play again.

Contrasting these rules of 'hand-ball' with those under which water-polo is now played, the similarity in many instances is so great that one might almost imagine that the Amateur Swimming Association had a copy before them when they recently set to work to draft out their own revised series. Written copies of the rules were nailed up in both boathouses; but only one match took place—in 1886, when Boscombe won by one goal to *nil*. The sea was very choppy, and H. W. Francis, a powerful and experienced sea-swimmer, pushed the ball in front of him for nearly thirty yards, and swam clean through the goal with it. The ball used was a grey rubber ball with an elastic mouthpiece. It was blown up to about a foot in diameter, and the nipple twisted and turned inside. After the match it was deflated, and carried away in the captain's pocket. Another match at Bournemouth Regatta

was prevented by the tremendously heavy seas, though so anxious were both teams to play that they spent the best part of an hour and swamped two rowing-boats in their efforts to anchor the mark-flags. Failing in this, the whole crowd swam twice round the pier-head, tossed about like corks, and returned to shore with a puffin, or 'diver-bird,' caught by one of the players.

In March 1888 Messrs. Roberts and Milledge's salt-water swimming-bath was opened, the game—still known as 'hand-ball,' and played under the original rules—was revived in real earnest, and a series of matches between the Bournemouth Amateur Rowing Club, the Boscombe Rowing Club, the Bournemouth Y.M.C.A., the Bournemouth Gymnasium, and a scratch 'town' team were played. In April the amended rules, drawn up by the Amateur Swimming Association, at last reached Bournemouth, and instead of placing the goals at the ends of the bath, a foot above the surface, and starting the game by all diving in at the word 'Go,' the new plan was adopted. The old ball was retained, nothing being said in the rules about it. The new rules, by allowing ducking and holding, made the game much rougher than before ; and a local paper, referring to a match played, said, 'The Swimming Association rules for water-polo are not at all liked by the locals, who prefer the old scientific passing game.'

The Lymington Swimming Club, thanks to the exertions of E. Helsby, H. E. S. Adams, and Alderman W. Murdoch, at that time the Mayor, was visited by Bournemouth swimmers, and the game established in their open sea-water baths. By 1889 the Bournemouth Rowing Club team had been displaced by the Y.M.C.A., but in August the same year the Bournemouth Swimming Club was formed, and absorbed all the contending local clubs into its ranks. E. J. Stidolph was the hon. sec., but was afterwards succeeded by R. Reid, and W. Pickford, who has supplied us with many items of interest relating to the history of the game in his district, was appointed captain.

The game now advanced rapidly, and in the summer of 1890 a visit was made to Portsmouth, where, off the Club's landing-stage, on the Southsea beach, the Bournemouth team won easily by eight goals to *nil*. The local team had scarcely an idea of the game; and in the subsequent match, Hants *v.* Middlesex, at the Portsmouth S. C. annual festival, the Bournemouth contingent were the backbone of the team, which was only beaten by three goals to one. The tactics and play of the more advanced Middlesex men made a deep impression, and gave the locals a better idea of the game. These matches created a good deal of interest, and the game was taken up at Southampton, where there was then only a large, open, circular sea-water bath. In July 1891 the Southampton club, newly formed, visited Bournemouth, and were easily beaten. After the match, in the course of the customary entertainment to the visiting team, the subject of a Hampshire Water-polo Association was discussed; and a fortnight later, at a representative meeting of the Portsmouth, Southampton, Lymington, and Bournemouth clubs, the Association was formed, with R. Reid as hon. sec., and H. W. Fisk of Portsmouth as president. The Bournemouth Club presented the new body with a twenty-guinea challenge cup, and matches were arranged with Surrey, with whom Hampshire made a draw of three goals each at Bournemouth Baths, but were subsequently beaten at the Victoria Baths, Peckham, by six to *nil*. In connection with this match the Bournemouth team carried out their first tour, and were disastrously beaten by the Nautilus and Tunbridge Wells Swimming Clubs, but, learning by experience more scientific play, were able to run the Ravensbourne Club to a draw. On returning home they won the Hampshire Cup for the first time, easily beating Portsmouth S.C. by twelve to *nil*, and Southampton S.C. by three to *nil*.

Thanks, however, to the coaching of A. W. McMinn, an old Hanley S.C. player, who had come to reside in Southampton, that team began to make rapid progress. In the

spring of 1892 the new Corporation Baths were opened there, and on that occasion the Bournemouth Club were invited to a match, which they won by five to *nil*, the Southampton men being as yet unused to bath-work. Later on, however, they had so far improved that in the first round of the Hants Cup they played two drawn games with Bournemouth, being afterwards beaten by five goals to *nil*. Lymington scratched to Portsmouth, who in turn were beaten by the Bournemouth second team by seven goals to one, and Bournemouth first again won the cup, defeating their second team in the final. This year G. Dominy undertook the duties of honorary secretary to the Association. The county match with Middlesex was lost by six goals to two, but that with Surrey was won by one goal to *nil*. Owing to the scattered character of the county, and there being only three closed swimming-baths, from twenty-five to thirty miles apart, the progress of the game in Hampshire is not likely to be very rapid. It is to be hoped, however, that, after taking such a firm root in the county, the game will continue to flourish.

The lead of the Southern counties has been followed in the North by Lancashire and Yorkshire. The former county played their first match at the end of 1892 against Notts, and defeated their opponents. They have now organised their forces, and it seems probable that before long they will make a bold bid for premier county honours. Yorkshire water-polo is principally fostered by means of an inter-club competition, which is creating great interest in the county owing to the efforts of Mr. W. J. Ruddock, an old Norwich swimmer. Leicestershire also has an association, and will probably endeavour to arrange matches with the other counties in the future. As soon as the counties formed definite associations, the question of county qualifications began to be discussed, and at the initiative of the writers, and with the approval of London League and Surrey County, the following was brought before the A.S.A. and unanimously passed :

That the qualifications required for players in county matches

shall be :—Birth or twelve months' continual residence before playing; also that :

(1) No player shall be eligible to play for more than one county in any one year.

(2) Whilst qualifying by residence a player shall be eligible to play on the behalf of the county for which he last played, but in no instance must clause 1 be infringed.

This is now binding on all the county associations.

The most pleasant games of water-polo are undoubtedly those in deep open still water. So much more scope is given for skilful play that fouling is largely avoided, and the absolute necessity for swimming, or keeping afloat without aid all through the match, assists in no small degree to develop and improve the staying powers of those taking part therein. Unfortunately there are but few spaces of open water which are available or suitable for the game, and the almost total absence of them in large cities compels the various associations to conduct their championships and other competitions in ordinary covered-in baths, which are, as a rule, far too shallow for the game to be played properly. The players, taking advantage of the opportunities offered them, naturally indulge whenever possible in a rest, by standing on the bottom of the bath.

Of the open water-baths which are suitable for the game, those at Tunbridge Wells have obtained the greatest notoriety. They are admirably situated, and the natural sloping banks afford a fine view for the spectators, who can look down from them into the bath, and follow every movement in the game.

For years past the local club has striven hard to popularise water-polo, and their matches are now always attended by an enthusiastic crowd of residents. Their home-match results afford an interesting table for comparison, as against the results of their games played away. These latter, in the majority of cases, are, of course, played in ordinary town baths. At home, the Tunbridge Wells Cygnus have time and again vanquished teams who in their respective districts are considered invincible, the altered conditions under which the game is played in deep

water no doubt aiding in the downfall of the visiting clubs. Many of the losing combinations have been compelled to admit that a long hard struggle in deep water, without any possible chance of rest except at half-time, is a far different thing to a swift passing game in a shallow bath, where, during one half of the match at least, an occasional rest can be taken. Further, in covered baths the water is usually tepid, and upon those swimmers whose practice is almost wholly confined to them the temperature of open water has naturally a great effect. That in itself should be sufficient proof, if it be needed, that water-polo in open water will develop those powers which

GOAL-POSTS FOR OPEN WATER

in cases of extremity and danger may be of extreme practical use to a swimmer. There are many who cannot stay long in open water, but in most instances this is merely due to habitual practice, with frequent rests, as well as short-distance racing, in heated baths.

As already stated, the play in open water is far different from that in a confined bath. The field of play is much larger, and the opportunities for making use of the swimming abilities and staying powers of a team consequently greater. The boundaries are usually marked out by means of floating buoys with flags, the goal-posts being placed at each end of the field of play. They cannot be more than thirty or less than nineteen

yards apart. The width of the field of play is limited to twenty yards or less. It is always well to make the size of the field of play as large as the rules permit. For open water, a very ingenious yet easily made goal-post is used by the London League when on tour, and as it has been adopted by a number of clubs, and is light and portable, a description of its manufacture is given here.

Take two boards about 6 inches wide, 1 inch thick, and 10 feet 6 inches long, and place them parallel with each other about 6 inches apart, or else join two or three boards together. Then obtain two lengths of 3-inch battening, 2 feet 6 inches long, and fix with thumbscrews across each end of the two parallel boards on the under side. This will make a floating platform 18 inches wide, with two cross-pieces projecting 1 foot. Then to the extremity of the projecting pieces hinge two upright posts, 3 feet 3 inches long, of similar battening, and fit a thin support to the outside of each upright post and cross-piece by means of thumbscrews, as in the diagram on preceding page. To the top of the uprights fix the crossbar, also with thumbscrews. The crossbar must be as light as possible. It may be made out of a thin batten 3 inches wide, $\frac{1}{2}$ inch to $\frac{5}{8}$ inch thick, and placed against the uprights with the small edge downwards, the top being level with the top of the uprights. By this method a goal-post 10 feet wide and 3 feet high can be easily constructed, and as the whole of it may be taken to pieces in a few minutes, its advantage will be apparent to all clubs who play in open water, and who in many cases do not have goal-posts of the proper dimensions, or have to erect fresh posts for every game.

These posts can be fixed in position with bags of ballast, the ropes being fastened to each end of the goal-posts to keep them from swinging round. They should be thrown out as far as possible from each end. If a committee boat be available, it should be moored alongside the posts. When playing in the sea, particular notice should be taken as to the direction in

which the tide is flowing, as the posts should be fixed athwart the tide, otherwise the play is all at one end, i.e. that towards which the tide is flowing. In baths the width of the field of play is determined by the size of the bath, varying from about 25 to 40 feet. The length must not be more than 30 yards, or less than 19 yards, the somewhat peculiar minimum being due to the fact that there are a number of baths in England only 20 yards long. The posts are fixed not less than 1 foot from each end. In the longer baths the posts in the shallow end are often brought forward, so as to get the deeper water to play in, but the game is never so satisfactory from a swimming point of view in a bath as in open water. The goal-posts are generally made now of light galvanized-iron piping, with broad shoes to rest on the bottom of the bath. When they are fixed at the end of the bath, they are held in position by means of a clip bracket one foot long, the uprights resting on the bottom, and the bracket clipping them to the rail of the bath. The crossbar is adjusted with a thumbscrew and ring. When the posts have to be placed some distance up the bath away from the end, they have to be fixed in a similar manner to a horizontal bar, the attachments being made of cord and fixed to the rail or side of bath, boxes, or gallery. Another system, and perhaps more simple than any, is one by which the posts are lowered from the roof of the bath by means of pulley cords, and, being heavy, they keep in position.

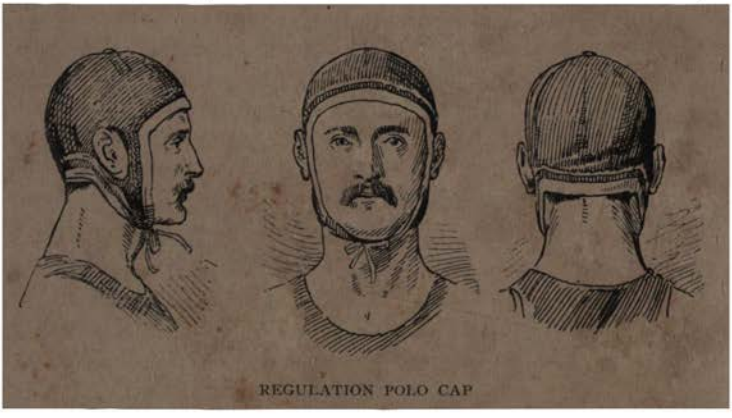
A great improvement is that adopted by Surrey County, of fixing painted wood framework in front of the posts above the water level, so as to make the goal as clear as possible for the player.

The posts should not be painted of a dark colour, but striped red and white, or some other easily recognisable combination of colours, because most games are played in artificial light, and it is difficult for the officials as well as the players to see the posts distinctly if not coloured as recommended.

Careful attention should also be given to the caps worn by players, as in many instances club colours are so much alike

that it is often quite impossible for spectators to distinguish the different players in a match who may not be personally known to them. From a long experience we think it would be wise for the various Leagues and Associations to frame a rule compelling clubs in all their matches to wear either red or white caps of approved pattern.

Two or three kinds of caps are used, but the best are those as illustrated in this sketch. They are best made of turkey twill or similar cotton material, the side-flaps fitting over the ears, and the cap being laced, tied, or buttoned under the chin. They



REGULATION POLO CAP

should be fastened securely, so as to avoid the possibility of their being pulled off during the game.

In consequence of the sudden changes of front which are necessary to good play, regular practice is important. It must not consist of the mere pitching of the ball. The arrangement of friendly matches, or the selection of teams from among the members of one club, is a far more effectual method of gaining real practice and experience. A player who wishes to become an expert must devote a considerable time to the study of the niceties of the game, or else in big contests, where every man should be keenly working for the victory of his side, he will be worse than useless. During

the last few years, the game of water-polo has been far more scientifically played than it was at the outset, and the various alterations of the rules which have been detailed have tended towards this end, as they have been the means of introducing combined instead of loose play. The system prevalent up to 1888 was a mere exhibition of brute strength. Passing, punting, and dribbling the ball were scarcely ever practised, and, except in the case of the leading teams, rarely attempted.

Until the first international match was played, nearly every game was fought out on individual lines ; that is to say, the members of the teams considered that their sole duty, without regard to position, was the scoring of goals ; and very often this anxiety to spoil the combination of a side led to ludicrous defeats. Yet it must not be imagined that every player or every team did this. There were some who strictly played out their games on a sound system of combination ; and it was by reason of their victories that attention was called to many anomalies in the then code of laws. When England's picked seven met the Scots for the first time, the eyes of water-polo players were opened ; for the Scots, who were nearly all lightly built men, simply made an exhibition of their opponents, who during the game could not understand or in any way checkmate the skilful passing and dribbling tactics of the victors. To the experience gained in the international match may therefore rightly be attributed the improvement in the game all round ; for though the Scots had made more rapid progress than their Southern brethren, they have also benefited largely by the innovation.

The general custom is to divide a team up as follows : Goal, two backs, half-back, centre forward, two forwards. The office of captain is, of course, a very important one. It is hardly necessary to say that he must be well versed not only in the rules of the game, but also those of the competition or competitions in which his club may at the time be contending. He should organise regular and frequent practices, take careful note of the faults or merits of each individual player, and be

careful that none of them, including himself, infringes the laws, or gives cause for complaint by another club. It is his duty to instruct and advise the players on all points of the game, to show them what positions they should take up in relation to each other so that the play of each of them may be effective, and to see that they do not leave their opponents free at any time for attack or defence. No selfishness in scoring should be allowed by him, and the urgent need of good combination should be frequently pointed out. He must impress upon each member of the team that standing or walking in shallow water must be avoided, as nothing is gained thereby, because while walking or standing a foul may unwittingly be committed at a critical portion of the game, and either the whole attack or defence, as the case may be, spoilt. The team should be advised always to play the ball, and never duck an opponent unless he is unmistakably holding the ball. Quick, short passing should be practised rather than long shots, as to make a long shot effective one has to get into a certain position, and in doing so time—an all-important essential in a fast game—is lost.

The swiftness with the ball and accuracy of throw of each player should be individually tested by the captain before the man is admitted to the team. A player may have plenty of strength, but bad judgment in the use of it. Above all, absolute obedience to the captain's signs or orders must be insisted upon.

FORWARDS

The forwards must be good swimmers who can catch a ball, quickly judge distances, pass, dribble, and shoot strongly and accurately from any portion of the field of play. One of them should take up a position either on the right or left of the opponents' goal, but outside the prescribed limit. The other should take the opposite side, but be a little farther away from the goal. Both should always be on the alert for the ball, but in place of holding it should make quick, short passes

to each other or to the centre forward, the ball in all cases being passed to the side furthest away from goal, and never direct into the other's hands, unless uncovered by the opposing back. If it be passed directly to a covered player, he will almost to a surety be tackled with it; whereas, if it be passed on the outside of him, he at once gets an opportunity, if he be a fast swimmer, of clearing himself from the cover. The forwards should always hold themselves ready for a quick stroke or two, so as to clear; but this ability will come by practice. When this is acquired, the forwards will find that very often an almost free throw at goal can be obtained.

When dribbling the ball the forwards should clear on the outside and pass rapidly if likely to be tackled by an opposing player.

They should keep well up towards goal, and if the centre forward gain possession, one of the other forwards should at once take his place, because if the attempt at goal be frustrated he will then be in a position to renew the attack.

It is the duty of the forwards to keep free, as far as possible, from the opposing side, and, when a change has taken place owing to their opponents' defence play, to get back to position as quickly as possible. They should take care not to infringe the rule prohibiting a player from taking up a position within a yard of the opposing goal, and should also avoid placing themselves too far over to the side of the bath or field of play.

When engaged in attacking, if the ball be in danger of crossing the goal-line, care should be taken to avoid touching it. The opposing back should in this case be hard pressed, prevented from making a long shot, and, if possible, compelled in self-defence to concede a corner. No time should be lost in taking the corner throw, because, although the rules prohibit a change of position between the blowing of the whistle and the taking of the throw, delay allows the backs to get their bodies better balanced for a quick start, and the advantage accruing from the free throw is thereby neutralised.

CENTRE FORWARD

Upon the centre forward devolves the task of guiding the forward play. He should be in touch with the wing forwards, and, when their chance of scoring seems more open than his, should always pass out to them. He must be utterly unselfish in his play, look well after the opposing half-back, and in a wide field of play, if possible, tire him by dribbling or punting the ball from side to side in a zigzag forward direction, and then, when in danger of being tackled, pass rapidly forward either to the nearest forward or to the one on the other side, as opportunity offers. With a centre forward, as, in fact, with all other players, a knowledge of the 'Trudgeon' stroke is invaluable. Nearly every good man now uses this or an imitation of it in water-polo, because a change of position is more rapidly secured, the speed is faster for a short distance, and the opponents can be seen. The hints given for the play of forwards apply equally to the centre forward. He should be quick and sure with the ball, a first-class swimmer, and one well able to stay through a tiring game.

HALF-BACK

The half-back has the most onerous post in a team. With the forwards a certain amount of individual play is necessary, but a half-back must make combination the essential feature of his play. He must be ready to assist the attack, and be as much in touch with his backs as the centre forward is with the forwards. The centre forward of the opposing team is the man that he must watch, and whose attack play he must try to nullify. If he keep cool and do not rashly shoot at goal, he will prove of immense service to his side. The forwards should be well fed by him, and left to score when able. It is only by a bare chance that a half-back can score, and in good matches the attack is spoilt if the half-back, instead of passing, selfishly tries to shoot between the posts. He should be a good swimmer, well able to dribble or punt, and throw or pass with either hand under any conditions. At the starting of the game

either the half-back or the centre forward should be told off by the captain according to speed—the fastest swimmer for preference—to sprint for the ball, and if he obtain possession to pass it back. If the centre forward be allotted this duty, he should pass to the half-back and then swim on to his position, whilst the wing forwards are also taking up their places. If the half-back has to go for the ball, he should pass to his backs and return to his proper place, which is some two or three yards in advance of the backs. As soon as the backs receive the ball, it should be held until the forwards are up in position, and then passed to them. Upon the play of the half-back greatly depends the success of the team, and a clear-headed, sure, and swift swimmer should be appointed to fill this post. He must by practice learn to know instinctively the place of every man in the team, must never stand, and always be ready to accept a pass, no matter how fast it may come.

BACKS

The backs should take up a position near to their opponents' forwards in order to prevent them from scoring, but they should never allow them to be between them and their own goal. They must closely watch them, and be ever ready to move rapidly when danger threatens. It is usual to appoint the heaviest men in the team as backs, but judgment must of course be used as to their capabilities; because it is better to have a strong defence and a weak attack than a weak defence and a strong attack. This is particularly noticeable when the game is played in open water. The backs are very often called upon to save under very difficult circumstances, as when hard pressed by speedier swimmers than themselves, and thus it is very necessary that they should keep close watch of their opponents, at the same refraining from holding or impeding them. They should be smart and tactical, be alive to the necessity of giving away a corner, or of passing to their goal-keeper when the goal is in danger. They must also be capable of passing to one another, or else forward to the half-back. There

must be no hesitation in their work. They should never leave their place after passing, or allow the opposing forwards to get away from them. Their passes should be short, so that the half-back may reach them easily. They may pass to their forwards if opportunity occurs for obtaining a deliberate and strong shot. The work of the half-back and backs should be so regular and combined that the forwards may place confidence in them. This will prevent the latter from leaving their own positions to assist in the defence.

GOAL-KEEPER

The position of goal-keeper is not eagerly sought after, and in many instances the post is given to a wretched swimmer. It is not difficult to find the reason of this. The goal-keeper has the cold and thankless task of keeping in one place during the game, and cannot exercise himself by swimming. Men who can swim well are chary of having thrown upon them the arduous task of guarding the goal mouth, which is made doubly difficult if the team lack combination. Notwithstanding this a good swimmer should be appointed, and one well able to float and support himself with the legs. To properly defend a goal requires skill, rapidity of action, keen judgment, quick and sure catching, and the ability to throw or punch out immediately the ball comes, in a direction which will be of service to the side. In all practice the goal-keeper should be careful to avoid sending the ball past the centre of the bath or bringing it under the crossbar when throwing. If half a dozen forwards are put on for shooting practice, each with a ball, the goal-keeper's play will sensibly improve in a very short time, as he will thereby become accustomed to exercise rapid judgment, and also quickness of sight. One thing which often happens to a goal-keeper is a sudden obscuration of sight after going under water. This can be at once remedied by rubbing the eyelids, and thus preventing the water remaining on the body from dropping over the eye. To all players this hint may be of service. When likely to be tackled by the opposing forwards,

the goal-keeper should either pass out to the backs or give away a corner. He must never get flurried, or a goal is certain to be scored against him. When free throws are being taken by the opposing side, a sharp look-out should be kept so as to avoid being hit by the ball. When close in, this trick is often resorted to and a goal scored, as the rule which compels the touching of one other player by the ball before scoring from a free throw is thereby complied with.

PRACTICE OF A TEAM

If it be found impossible to obtain the assistance of friendly teams for practice games, or a second team from the club be not available, a good system of practice is that adopted by several leading combinations. Only one goal is used, and only one half of the field of play. The goal-keeper, backs, and half-back defend, whilst the three forwards attack. If the ball be thrown beyond half-way, the centre forward is allowed a free throw. The goal-keeper starts the practice by throwing the ball out, the others having taken their positions as in the ordinary game. This is also the procedure after the scoring of a goal. In many cases this is a better plan than having another team from the club, because very often the second-rate players insist upon having one or two of the first team in their ranks, and the practice, as far as the improvement of the combination is concerned, is spoilt. A referee should in all cases be appointed to see that the players conform to the rules.

HOW TO THROW THE BALL

As may be easily imagined, ability to throw the ball and pass it accurately only comes with practice, and no amount of description will assist a feeble player. A few hints as to the various methods may, however, be useful.

If, when using the breast-stroke, the player desires to pass the ball back, the hand should be placed under it and the

arm quickly raised. As soon as the arm is above the surface, it is thrown over the head rapidly, and the ball forced to travel high or low, according to the distance and direction in which it is required to be sent. Either hand can be used, but it is always best to throw with the arm which is farthest away from the nearest opponent. When throwing, a stroke with the legs should be taken, and the disengaged arm forced downwards, to stop the slip given to the body by the throw. If this be done well, it will enable the player to apply more force to the throw or pass.

The throw from the shoulder or side of the head is a very

THE PASS BACK

old plan, and is generally used when a deliberate shot can be taken. The ball is picked up and carried to the shoulder, being held somewhat after the fashion of a weight in athletic competitions. It is rested against the side of the head for accuracy of aim and the better send-off that is obtainable, and is then sent forward with as much force as possible. The legs and disengaged hand are driven down rapidly in the water, and the body shot forward as the aim is taken. A development of this throw is the *ricochet* shot, which, if properly taken, is vastly puzzling to a goal-keeper. The ball is sent in with all possible speed, and so thrown as to hit the water a few yards in

front of goal. Unless force can be imparted to the *ricochet* shot, it is practically giving away points to attempt it.

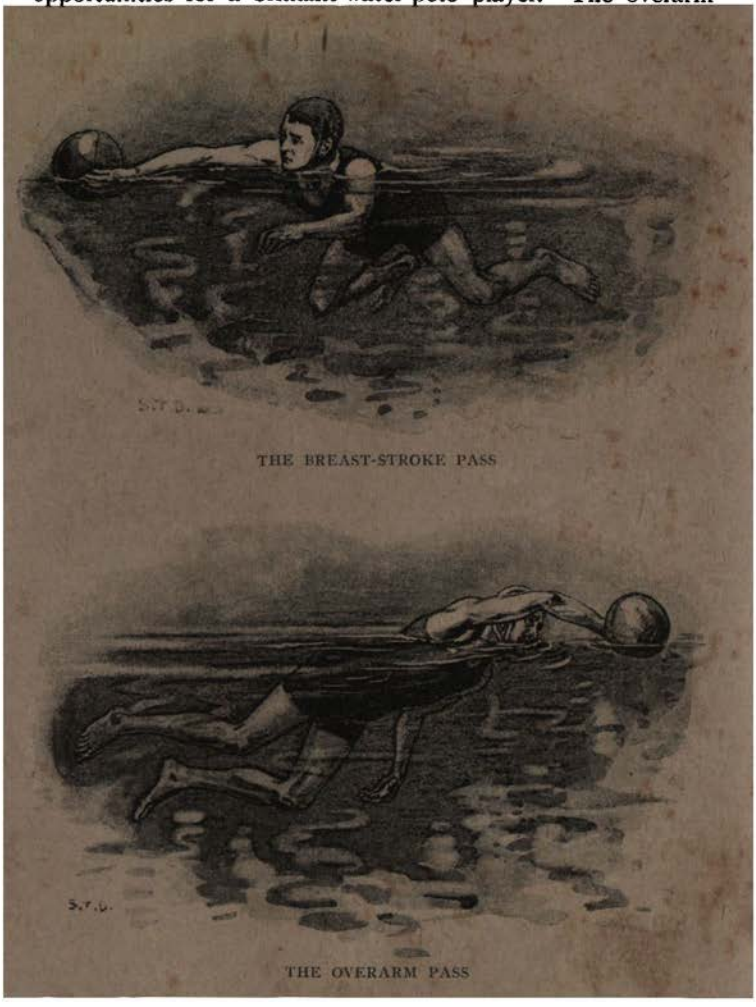
Another breast-stroke pass is that from side to side with either hand when outstretched. The hand is turned with the palm outward and placed under the ball, which is at once lifted out. This is a valuable pass when pressed, especially if it can be done with right or left hand.

The pass, when swimming on the side, is managed by placing the hand under the ball. In this position it can be thrown straight back, and, with practice, to the blind side of the body as well as out to other side. To pass to the blind side, the arm, when it rises with the ball, must be rapidly forced over the body, and the impetus to the ball given from the lower part of the forearm, wrist, and hand. Many players can perform this difficult pass so accurately as to know almost exactly in what part of the field of play the ball will fall.

THE SHOULDER THROW

There is plenty of scope for a back-swimmer at water-polo, especially when long shots are required. The body is thrown back, and the arm outstretched. As the legs are closed, the arm shoots forward, and the ball is driven at a great pace.

As before stated, the 'Trudgeon' stroke offers the best opportunities for a brilliant water-polo player. The overarm

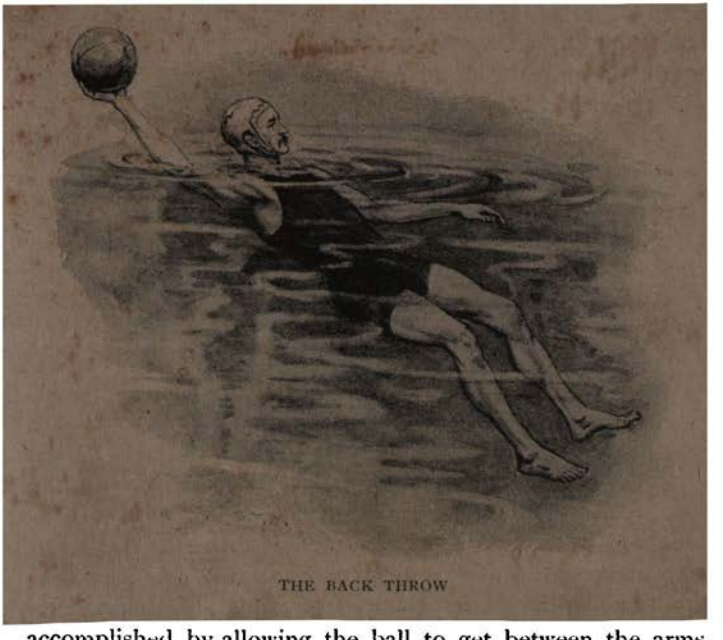


THE BREAST-STROKE PASS

THE OVERARM PASS

pass can be done with either hand, and the ball placed without the player having to turn round for aim. The arms are so

placed that the pass out to right or left can be accomplished instantly, and the disengaged arm and legs used to maintain steadiness. With the 'Trudgeon' stroke the ball may be punted rapidly up or across the bath, the player at the same time being free from tackling, because in punting the ball is driven forward by either hand, as the player swims, and is not held. This stroke is again of essential service in dribbling, which is



THE BACK THROW

accomplished by allowing the ball to get between the arms. Then, as the swimmer progresses, the ball goes with him, it hitting first one arm and then the other, or the chin, but not getting out from between the arms.

There are many other little points of the game which come naturally after a time. The sending out of play or into touch, if we may use the term, is sometimes of use, although it requires judgment. The rapid hitting of the nearest player with the ball when awarded a free throw, in such a manner as to

make it rebound to advantage, is also another of the many points which can only be learnt by playing the game.

THE REFEREE

If there be one thing more than another that causes disputes among clubs, it is the appointment of inefficient referees. A referee should be cool and impartial, of known capability, and thoroughly self-confident. Unless he be the latter he is not of much use, as his decisions will be given with hesitation, and generally objected to.

A referee should first of all satisfy himself that the ball is of the proper size, that the dimensions of the goal-posts are correct, and that they are fixed at least one foot from the end of the bath or any other obstruction. He should then check the depth of the water, and measure the length and width of the field of play, taking care that half distance is marked by some visible object.

After this he should ascertain that the captains have agreed upon all preliminaries, if not, give a decision as the rules allow him to do, and insist upon all players wearing distinctive coloured caps, as well as otherwise conforming to the rules. Particular care should be taken by him that the officials are in their places, and that the goal-scorers are informed that their duties are to signify by means of a flag when the entire ball has passed beyond the goal-posts and under the bar, no matter how passed through, as well as to keep the scores at their respective ends. Before starting the game he should see that the goal-scorers are provided with flags, and be careful to have a proper timekeeper who is thoroughly conversant with the rules. If possible, one side of the field of play should be clear, so as to permit the referee to follow the game from one end of the course to the other.

The absolute control of the game is in the hands of the referee. All cases of misconduct by players should be reported by him to the district association, so that they may be dealt

with in accordance with the rules governing meetings, and further, any swimmer who may interfere with or insult the referee during the game, or after, should be reported.

The following hints for referees may be of service :

(*a*) A thorough acquaintance with the rules relating to fouls is absolutely necessary, and in awarding fouls there must be no indecision whatever.

(*b*) When once a decision has been given, do not allow any player or spectator to question your ruling ; for the laws of the A.S.A. definitely state how protests shall be made.

(*c*) See that the resting clause be not abused. The rules only allow standing on the bottom for the purpose of resting, and players must not be allowed to walk about, stand with the arms extended with the idea of shadowing or molesting any player, or jump from the bottom.

(*d*) As to the conduct of matches, the rules governing the water-polo championship should be used as the basis of any decision, when applicable.

(*e*) Goal-keepers must not be allowed to throw the ball past the half-distance mark under any circumstances. If the ball, when thrown by the goal-keeper, travels past half-distance, even if it touch the water before reaching half-distance, the rule is thereby infringed.

(*f*) Note that dribbling or striking the ball is not holding, but that lifting, carrying, pressing under water, or placing the hand under or over the ball when actually touching, is holding.

(*g*) See that no player holds the rail or side during any part of the game.

(*h*) When a goal-keeper or any other player, except in the case of free throws, puts the ball through his own goal, it must be at once signified by the goal-scorer, and declared a goal to the opposing side.

(*i*) Note that a goal cannot be scored from a free throw unless it has touched at least one other player. It does not matter to which side the player belongs.

(*j*) Be careful to award all corner throws to the proper side. It is a corner throw when the ball passes off the goal-keeper behind his own goal-line.

(*k*) When a ball goes out of play the last player it *touches* must be deemed as having sent it out of play.

(*l*) Be particularly stringent with regards to wilful fouls. Only caution the players once, and then enforce the penalty. When advantage is taken of the rule which awards a foul for holding the rail in order to prevent the scoring of a goal, do not allow it, but caution the player, and for a second offence order him out of the bath.

(*m*) Note the rule as to 'leaving the water, or sitting or standing on the steps.'

CHAPTER IX

THE GOVERNMENT OF SWIMMING

THE banding of clubs together for the protection of their common interests has had a very marked effect upon the progress of amateur swimming as a competitive sport during the last quarter of a century. In its early days the governing body was almost universally decried, but it has gradually overcome all opposition, and every important club in the kingdom now sends its representatives to the Swimming Parliament. The clubs composing it are better organised, one set of racing laws is adopted by them all, and whenever an amateur swimmer competes at a meeting recognised by the association, he is certain of obtaining fair play, or else swift retributive justice is meted out to the offenders. Almost every sport has its governing body, but none other is so representative in its organisation as the Amateur Swimming Association, whose present rules are based on the best ideas of the Amateur Athletic Association and the National Cyclists Union. Between these two powerful associations and the A.S.A. a bond of union exists, and the National Skating Association has just been added to this brotherhood of sport, so that whenever an amateur transgresses the rules of any of the four a quadruple penalty falls upon him; until his suspension be removed, not one of the bodies will allow him to compete at meetings held under its laws.

Prior to the year 1869 there was very little if, indeed, any

distinction between amateur and professional swimmers. The baths were few in number, ill constructed, and badly ventilated, the race meetings of a rough and ready character which beggars description. There were very few clubs to control racing, and the swimmers were allowed any amount of latitude. At length an attempt was made to improve upon this state of affairs, and on January 7, 1869, a Swimming Congress was held at the German Gymnasium, King's Cross, London, under the presidency of Mr. E. G. Ravenstein. It was then proposed by Mr. W. W. Ramsden, for many years a very earnest worker in the swimming world, and seconded by Mr. T. Morris, National Club, the first winner of the mile amateur championship (though he afterwards became a professional), that an association composed of the various clubs in London should at once be formed to promote and encourage the art of swimming. The proposal was agreed to, and a committee appointed to formulate a code of rules. This committee reported on February 11 of the same year, and the amalgamation was then known as the Associated Metropolitan Swimming Clubs. In the original rules the amateur definition was :

THE A.S.A. CHAMPIONSHIP MEDAL.

1. Persons who have competed for money prizes, for wagers, for public or admission money, or who have otherwise made the art of swimming a means of pecuniary profit, shall not be allowed to compete as amateurs.

2. The fact of having competed with a professional for honour or for money (if an intention is announced before starting to hand the amount of the prize, if successful, to the objects of the association) shall not disqualify in competitions confined to amateurs.

Shortly after the formation of this body it was decided to institute the mile amateur swimming championship, the race to

be swum in the Thames from Putney to Hammersmith. The clubs that (in addition to certain individual swimmers) guaranteed the expenses were the Alliance, North London, Serpentine, National, West London, and St. Pancras. This race has been carried out every year since, but the course was altered from running to still water in 1873.

On June 24, 1869, the governing body took the title of the London Swimming Association, and shortly after altered this to that of the Metropolitan Swimming Association. As far as we can gather from the records of this early amalgamation, it appears to have been received with a chorus of approval, but accorded an almost invisible quantity of active support. In its gradual development it was greatly hampered by lack of funds, for the clubs belonging to it apparently believed that the objects of the institution would be quite sufficient to attract public attention. Its influence, as its title indicates, was purely local, but it laid the foundation stone of the present A.S.A., and its progenitors must regard with pleasure the position which its more vigorous descendant has gained. The great drawback to its early progress was undoubtedly the frequent and apparently interminable discussions on the vexed question as to what actually constituted a professional swimmer.

On January 19, 1874, it was almost unanimously decided to allow an amateur to race against a professional for a prize or honour only. Then began a series of bitter struggles, lasting over some years, which alienated the sympathies of many of the best supporters of the association. At first the mixed races were received with approval, but they soon involved the governing body in all kinds of difficulties. The average amateur of that day had just as much desire for gain as the professional, and it was no uncommon practice to arrange a match for a small prize, with a large side bet as the principal consideration.

Early in February 1874 the title of the association was again changed. The first general meeting of the new body, known as the Swimming Association of Great Britain, was held on March 9 of that year, and it was then decided to extend its

ranks so as to include all the clubs in the country. Its influence for good was, however, small, the laxity of the amateur definition gave rise to much bickering and discontent, and the discordant elements were not removed till after years of patient and energetic work. The position of the association became so bad that on January 10, 1876, it was deemed best to call a special meeting of all swimmers to discuss the operation of the laws relating to amateur swimming, but nothing resulted therefrom. Resolution after resolution was passed by the seven or eight persons who attended the meetings at this period, but none of them was put into operation, the greater part of them being repudiated when found inconvenient, and gradually the association sank into a state of collapse and bankruptcy. The mile championship was fortunately regularly organised, but when, on September 9, 1876, Horace Davenport, of the Ilex Club, won the race for the third time in succession, the championship cup was not forthcoming. The winner generously offered to assist the association financially, but his offer was declined, until the delegates, absolutely at their wits' end, had themselves to approach him, and Mr. Davenport thereupon practically paid half the purchase money of the cup which he had so handsomely won. From this date there was a noticeable improvement in the attendances at the meetings. The clubs began to take more interest in the work. The balance-sheet for 1877, which showed an income of 84*l.* 12*s.* 4*d.*, must have been infinitely more satisfactory than that of 1876, when it had to be admitted that the total receipts for the year consisted of the miserable sum of 4*l.* 2*s.* 6*d.* The great improvement in the financial position of the association was most creditable to the clubs composing it. They were then only ten in number. Two of these were provincial clubs, Brighton and Portsmouth; the Albert, Camden, Alliance, Dreadnought, North London, Regent, South-East London, and West London were all London organisations. This improvement was, however, not lasting, for another struggle over the amateur question soon began. The recurrence of these wordy warfares was in-

evitable while the rules then in force existed. Almost every year attempts had been made to separate amateurs from professionals in all contests, but without avail ; and the better-class clubs held aloof from the association. Their policy was a mistaken one, as they would have been far better able to leaven the ranks of the association when once inside than when regarding it with cynical indifference. The officers of the association were finally compelled to summon an open meeting of all persons interested in the art, because in the year 1880 the work of the association had come to a standstill. The usual monthly meetings in February, March, and April of that year were made void through the non-attendance of delegates. At the open meeting, which was held on June 28 of that year, a couple of months after the inaugural meeting of the Amateur Athletic Association, the amateur question was the chief topic of discussion. Dr. Hunter Barron (of the Otter Club), Horace Davenport (Ilex), H. Benjamin (Cygnus), H. H. Griffin (London Athletic Club), and a number of other well-known supporters of the definition of an amateur as adopted by the A.A.A. attended the gathering. The definition then in force read as follows :

1. Persons who have competed for money prizes, for wagers, for public or admission money, or who have otherwise made the art of swimming a means of pecuniary profit, shall not be allowed to compete as amateurs.

2. That amateurs be allowed to compete against professionals for a prize or honour only.

So lengthy was the discussion on the proposed alteration that no fewer than five adjournments were necessary. Ultimately the definition was revised and was brought into force, as from August 1, 1880. It then read as follows :

An amateur is one who has never taught, pursued, or assisted in the practice of swimming or any other athletic exercise as a means of pecuniary gain, and who has never competed for a money prize or with a professional or professionals, save under association rules.

In order to make this rule more explicit, and that the wish of the association should be understood, four clauses were added, explaining how an amateur swimmer forfeits his right to that title. It was decided that anyone did so:

(*a*) Who should take part in any race for a prize with anyone who was not an amateur, without the express sanction of the association.

(*b*) Who should sell or make any pecuniary profit out of a prize, directly or indirectly.

(*c*) Who should compete in races described as 'All England Handicaps,' 'Open to All Comers,' &c. (as such are professional races, no matter what the prizes are), or in any competition not strictly confined to amateurs (under the association definition) except under clause (*a*).

(*d*) Who should compete for a declared wager or staked bet.

Under the old rule an amateur could take part with a professional for a prize, but this permission had been so much abused as to lead to almost open evasion of the law. The races were usually advertised as open to All England and All-comers, and the prizes valued at about five pounds. The winner had to declare whether he was an amateur or a professional. If an avowed professional, he would take the money publicly; but if an amateur won, the procedure was to explain the rule to him, and ask if he chose to remain an amateur. In the event of his doing so he was then informed that a prize must be purchased, and asked to nominate some other person to receive the money and purchase the prize. There was no check as to whether a prize was ever purchased or not, and, needless to say, a very strong feeling was expressed against the new conditions. The whole work of organisation had to be re-started, but gradually the reform party gained ground and were instrumental in gaining leave from the association to call another open meeting of swimmers for April 25, 1881. The resolutions which were then placed before the meeting were regarded as so important that the discussion was adjourned until May 23, in order to give the provincial clubs an opportunity of con

sidering the proposed new definition. A preliminary vote of those assembled was taken on the all-important question as to whether amateurs should be allowed to swim against professionals, and the decision was in the negative. At the adjourned meeting over one hundred swimmers were present, the most prominent among them being Mr. H. W. Fisk, of the Portsmouth Club, who addressed the gathering at some length, contending that the original amateur definition, preventing amateurs from competing against professionals under any circumstances, was the best. His powerful advocacy resulted in the meeting defeating an amendment to return to the rules in force ten months previously by sixty-two votes to forty, and it was agreed to eliminate from clause (*a*) of the then existing rule the words, 'without the express sanction of the association,' thereby prohibiting mixed races altogether.

The professionals at once determined to form an association of their own, and for a time their efforts seemed likely to be successful; but although it held a few promising meetings when Mr. Tom Easton was secretary, it collapsed in a few years. It is to be regretted that the honest attempt which was made by the promoters to raise the status of professional instructors of the art has resulted in failure.

But the amateur association soon realised the value of the sensible change which had been made in their laws. In the report for the year 1880 the officers said:

> The year did not open favourably for the association, so little interest being taken in its proceedings that a quorum was not obtainable. The association had incurred liabilities which it was unable to meet, and though subscriptions, &c., were due, there seemed little prospect of the clubs paying, nor have they done so. Several clubs which had hitherto supported the association had seceded, and it appeared probable that the association would be an institution of the past.

Now compare this with the report of 1881:

> The committee have great pleasure in submitting their annual report, and consider that the success which has attended the efforts

of the association for the welfare of swimming during the past season, and the continued and steadily increasing support which the association now enjoys, from provincial as well as metropolitan clubs, is a matter for general congratulation and satisfaction.

The association was still almost entirely confined to London, but as its influence became greater the subjects which demanded legislation increased to such an extent that its organisation was utterly insufficient to cope with the work. A meeting was held every month, and as the same delegates did not attend each time, the resolutions and orders became so entangled and conflicting as to bring the government of amateur swimming again into a state of chaos. A man declared a professional at one meeting would be declared an amateur at the next, and had not a decided step been taken by what are termed the exclusive clubs—that is, those who give invitation instead of open events at their annual galas—the S.A.G.B. would have drifted into oblivion.

On April 7, 1884, the Otter Club resigned its membership of the association, in consequence of a dispute on the vexed question of amateurism and professionalism, the details of which need not be revived. The action of the Otter immediately caused some eight or nine other clubs to secede, and to form a new body termed the Amateur Swimming Union. The president of the S.A.G.B., Mr. Horace Davenport, also resigned, and Dr. Hunter Barron was elected in his stead. Dr. Barron had the love of swimming at heart, and his early death a few years back was regretted by all those with whom he had come into contact. He worked hard and well for the S.A.G.B., and nothing gave him greater pleasure than to hear of its success.

But all progress was stopped by the feud existing between the S.A.G.B. and the A.S.U. For two years a desperate struggle for supremacy went on. Neither side would give way, and some ridiculous suspensions were decreed. An amateur, more particularly in London, often found himself in a fix. If he swam with one section of his club he would be suspended by

the S.A.G.B., if he swam with the other the A.S.U. would promptly warn him. Mr. S. D. Muttlebury, the famous Cambridge oarsman, had the curious fortune to be suspended by both. Finally the condition of affairs became so intolerable that Mr. H. Benjamin, of the Cygnus Club, by the exercise of considerable tact, managed to get the leaders on both sides to meet and discuss the points at issue. The result was that the two bodies agreed to co-operate in forming a new association with a distinct title, and the decision arrived at by this informal meeting was hailed with much satisfaction.

A meeting of the representatives of the two bodies was held on March 3, 1886, at which, after a long meeting, the following agreement was made :

1. That the S.A.G.B. and A.S.U. be dissolved, and a new association formed.

2. That the constitution of the new association be drawn up by a committee composed of delegates from both bodies, and be submitted to the clubs affiliated for their approval.

3. That the new association shall be styled the 'Amateur Swimming Association,' and the constitution and laws be based upon those of the A.A.A., N.C.U., S.A.G.B., and A.S.U.

4. That clubs shall have proportional representation and pay subscription according to the number of their active members; but no club shall have more than three delegates.

5. That the management of the association be vested in an executive, who shall meet as required, and a council, or general body, to meet at intervals of not less than three months.

6. That all amateur championships shall be under the direct control and the sole charge of the association.

7. That all amateur competitions shall be held under the laws of the association.

8. That all suspensions arising out of the late dispute between the S.A.G.B. and the A.S.U. be rescinded.

This report was submitted to the delegates of the S.A.G.B., by whom it was unanimously adopted, and the representatives were instructed to prepare rules for the new body, the Amateur Swimming Association.

The representatives appointed by the Association and

Union completed their work in about a month, and the new code for the future government of swimming was brought before the delegates of the affiliated clubs at a meeting held on April 12, 1886. It contained no fewer than 135 rules, divided into six parts: (1) constitution; (2) management; (3) appeals against suspensions; (4) conduct of council meetings; (5) conduct of race meetings; and (6) management of championships.

Five of the principal resolutions were passed at the first meeting, but at the next the management of the association by an executive was practically vetoed, and Dr. Hunter Barron thereupon resigned the presidency of the association. Shortly after the Union clubs joined in force and the A.S.A. was then formed. The primary rules of the A.S.A., as formed in 1886, were:

That the association be called 'The Amateur Swimming Association,' and consist of amateur swimming clubs; and the swimming members—joining as a body—of rowing, athletic, or kindred clubs.

That the objects of this association shall be:

(*a*) To promote and encourage the knowledge of the art of swimming.

(*b*) To hold amateur championships under the direction of the Council of the A.S.A.

(*c*) To promote the uniformity of rules for the control and regulation of amateur swimming and the management of race meetings.

(*d*) To enforce the observance of the laws and rules of the Amateur Swimming Association, and to deal with any infringement thereof.

The competing members composing the ranks of any swimming club wishing to join must be amateurs, and each club becoming affiliated must have a published rule to that effect.

All amateur races held under the Amateur Swimming Association rules must be confined to amateurs according to the definition of the Amateur Swimming Association, which is as follows: An amateur is one who has never competed for a money prize, declared wager, or staked bet; who has never taught, pursued, or assisted in the practice of swimming, or any other athletic exercise, as a means of pecuniary gain; and who has not, knowingly, or without protest, taken part in any competition or exhibition with anyone who is not an amateur.

The following exception shall be made to this law, viz.:—Amateur swimmers shall not lose their amateur status by competing with or against professional football players in ordinary club matches for which no prizes are given, or in cup competitions permitted by the National Football Associations or Rugby Unions of England, Ireland, Scotland, or Wales.

A swimmer ceases to be an amateur, and becomes a professional by—

(*a*) Engaging in swimming or any other athletic exercise—or personally teaching, training, or coaching any other person therein—for pecuniary gain.

(*b*) Selling, realising upon, or otherwise turning into cash, any prize won by him.

(*c*) Accepting remuneration for swimming in public, or by being employed for money or wages in a swimming bath or elsewhere as an attendant on swimmers.

The basis of representation and payment of each club shall be calculated on the number of its members. Clubs on joining must subscribe for and are entitled to representation on the number of members in the club at the time of becoming affiliated. No club can have more than three representatives. These representatives form the council of this association.

The managing body shall consist of a committee or executive, composed of the president, vice-presidents, honorary treasurer, honorary secretary, and twenty others, whose duty it shall be to carry out the standing orders of the council, and generally to transact the business of the association. The executive to have full powers:

(*a*) To nominate, as occasion may suggest, special or sub committees, to consider and report upon any questions that the executive may refer to them. The recommendations and resolutions embodied in such report shall, if adopted, be considered as the standing orders of the executive.

(*b*) To elect clubs as members of the association.

(*c*) To exercise financial control over all affairs of the association.

(*d*) To suspend for a time, or disqualify, anyone proved guilty of an infringement of the laws of the Amateur Swimming Association, or of any unfair practice connected with the sport, and to remit or shorten any such sentence upon due cause being shown.

(*e*) To fill up any vacancy occurring on the executive.

(*f*) To prosecute any professional who competes as an amateur.

(*g*) To make arrangements for holding the championships, be responsible for the places selected for the meetings, and for everything necessary for their proper administration.

(*h*) To appoint local officers in remote districts.

(*i*) To re-qualify, at their discretion, any amateur who shall have competed in ignorance contrary to the A.S.A. laws.

While the S.A.G.B. was fighting its rival, it did not altogether neglect other matters appertaining to the sport, for on April 13, 1885, a committee was appointed to draw up a set of rules for water-polo. Their report was presented on June 8, and passed. The management of the Long-Distance Championship, originally known as the Lords and Commons Race, was taken over by the association in this year, and has ever since been conducted exclusively by the governing body. It also distributed information respecting the amateur definition, and in other ways endeavoured to promote swimming. A committee was appointed in 1885 to negotiate with the Education Department and various members of Parliament, in order that swimming should be included in the Code in a similar manner to drill, but it was not until some years after that these early efforts ended in success. A conference was held in September, 1884, with representatives of the N.C.U., respecting the status of schoolmasters who received payment for teaching swimming, and also as regards the state of amateur swimming in Scotland. The A.A.A. were also asked to send delegates to the conference. It was resolved that schoolmasters receiving payment for teaching their scholars could not compete as amateurs, and that mixed races, i.e. professionals and amateurs, could not be allowed in Scotland after January 1, 1885.

The A.S.A. soon felt the benefit of the new constitution, which permitted of its ordinary work being transacted by a managing committee or executive, instead of by the whole body as in former years. Its power grew by leaps and bounds, and it was soon able to assume arbitrary control over all the amateur meetings in the country. It insisted upon the observance of its regulations, and compelled its

constituents to abstain from competing at meetings unless they were registered or held by affiliated clubs. The question of enforced permits was well fought out, but the council, having watched with interest the effect of the salutary laws enforced by the A.A.A. and N.C.U., adopted the same system. They granted permits to professionals at first on payment of fees, but afterwards abolished the fee. It is, however, not improbable that in the near future some attempts will be made to prevent the granting of permits to professionals altogether.

The work of the association soon grew to such an extent that the transaction of provincial business was greatly delayed, and the country clubs began to agitate for the dividing of the association into district bodies. The Scotch clubs were the first to take action. They held a meeting in Glasgow on June 25, 1887, at which representatives of the Arlington, Caxton, Dolphin, Eastern, Leander, Northern, Southern, South Side, Queen's Park, Western, and West of Scotland (Glasgow), Dundee Association, Brandon, Heart of Midlothian, and Lorne (Edinburgh), Carnegie (Dunfermline) attended ; Mr. A. Sinclair representing the Amateur Swimming Association. After a long discussion it was unanimously resolved to form a Scottish Amatéur Swimming Association. This body is worked by means of local centres, and accepts the definition of an amateur as defined by the A.S.A. Its formal inauguration took place on January 28, 1888, and ever since it has been in harmony with the older body.

The question of open betting at race meetings next engaged attention, and on March 29, 1889, a conference between the Amateur Athletic Association, National Cyclists Union, and Amateur Swimming Association was held in London. The delegates agreed that, though no attempt should be made to deal with private bets, yet it was clear that open betting, as carried on at many race meetings, was a scandal, and tended to prevent the more respectable members of the community from taking personal part or interest in many competitions. They suggested that the tickets issued should bear upon the

face of them a notice prohibiting betting, that in every case where betting was to be expected bills should be distributed stating that the offenders would be liable to expulsion, and that the utmost vigilance should be exercised in detecting competitors in any way in league with bookmakers. The evils attending upon betting are innumerable, and their results wide-spreading. It is the greatest curse of amateur sport, and is the direct cause of 'roping' and other malpractices.

No sooner had the Scotch question been settled than the A.S.A. attempted to form local centres in England and Ireland, but without success, until at length in 1889 the enforcement of the permit laws, and the consequent suspension of some Manchester swimmers, led to an open revolt in the North. The agitation against the A.S.A. was ably worked, and at a meeting in Manchester, the delegates of the Northern clubs who were there assembled in force declared their intention of forming an entirely separate and rival association to govern their own affairs. The A.S.A. meeting was held on the same night as the Northern conference, and telegrams were despatched from one meeting to the other, happily in conciliatory tones, the A.S.A. at the same time appointing three delegates, Mr. C. Val Hunter, C.C., and the writers of this book, to go to Manchester, and confer with the Northern swimmers. The Northern meeting was adjourned for a few days, the district papers in the meantime being flooded with letters urging the new Northern Counties Association to take no part in the general government of swimming. As may be imagined, the A.S.A. delegates felt that they had a difficult task before them. The work of the premier body was thoroughly misrepresented in the North, and its action in endeavouring to protect the interests of amateur swimmers was designated as the officiousness of the Southerners. As far as could be ascertained, the chief grounds of complaint were that the working of the association in all parts of the country could not be controlled from London, and that the championships were nearly all held in the London district.

The reception of the delegates was not entirely of a satisfactory character, each of them being allowed but ten minutes to address a crowded meeting of swimmers, who knew little or nothing about the working of the A.S.A., and who had been worked up to a spirit of antagonism by writers in the Press. But the meeting was utterly unprepared for the scheme which the A.S.A. delegates had to unfold, and the Northerners were forced to admit that the strong charges brought against the South as to their unsportsmanlike conduct were entirely unfounded. Printed copies of the scheme propounded by the deputation were handed round. It was termed 'A Proposed Scheme for the Better Management of Amateur Swimming,' and read as follows :

1. The present body known as the A.S.A. to have jurisdiction south of an imaginary straight line draw across England at 53° N. latitude (until such time as a Midland Counties A.S.A. be formed).

The Northern A.S.A. to have jurisdiction over all parts of England north of 53°. Clubs to join the association in whose district their meetings are held, and not to be allowed to affiliate to an association out of their district.

2. Each association to have the sole government of the sport in its district.

3. The laws of swimming and constitution rules to be the same for each body, and not to be altered except at the annual general meeting of the A.S.A. The rules to be called the Rules of the Amateur Swimming Association.

4. Each body to pay its own expenses.

5. The clubs affiliated to each body to have the right of representation in accordance with their numbers, at a meeting to be called annually at any one of the three centres—London, Manchester, or Birmingham—which shall be termed and known as the annual general meeting of the Amateur Swimming Association. The venue for the ensuing year to be decided by vote.

6. All championship meetings and ordinary galas, &c., to be advertised as being held under the laws of the Amateur Swimming Association.

7. The national championships to be managed by each association on the following lines, or in some similar manner (until such time as a Midland Association be formed) :

1890	*South and Midlands*	*North*
	Long distance	Mile
	Half-mile	500 yards
	220 yards	100 yards
	Plunging	
	Polo (final tie)	

1891	*South and Midlands*	*North*
	Long distance	Half-mile
	Mile	220 yards
	500 yards	Plunging
	100 yards	
	Polo (final tie)	

1892	*South and Midlands*	*North*
	Mile	Long distance
	Half-mile	Polo (final tie)
	220 yards	500 yards
	Plunging	
	100 yards	

The salt-water championship to be held in accordance with the conditions governing the race.

8. A final appeal committee consisting of representatives from each body to be appointed, who shall have referred to them for settlement any such questions as the annual general meeting may determine.

9. The expenses of the annual general meeting to be defrayed by both associations in proportion to the number of delegates of affiliated clubs entitled to attend such meetings.

The delegates further agreed practically to disband the existing A.S.A., and to form an entirely new body. After a very long discussion it was resolved, on the casting vote of the chairman, Mr. C. G. Plumpton of Barnsley, that the scheme brought forward by the Southerners be accepted as a basis of settlement. Thus ended happily, and in the short space of a fortnight, the greatest revolt ever made against the jurisdiction of the governing body. The A.S.A. also accepted the scheme,

removed the suspensions which had created the difficulty, and agreed, pending a final understanding, to recognise the jurisdiction of the Northern Counties A.S.A. over all swimming matters north of 53° latitude. The success of the Northerners then induced the Midland Aquatic Polo Association to make application to be placed on the same footing. They were invited to take part in a conference which was held at Anderton's Hotel, Fleet Street, London, on November 23, 1889, when it was finally agreed between the representatives of the three bodies assembled to create three divisions of the Amateur Swimming Association, termed respectively: the Northern Counties A.S.A., the Midland Counties A.S.A., and the Southern Counties A.S.A.

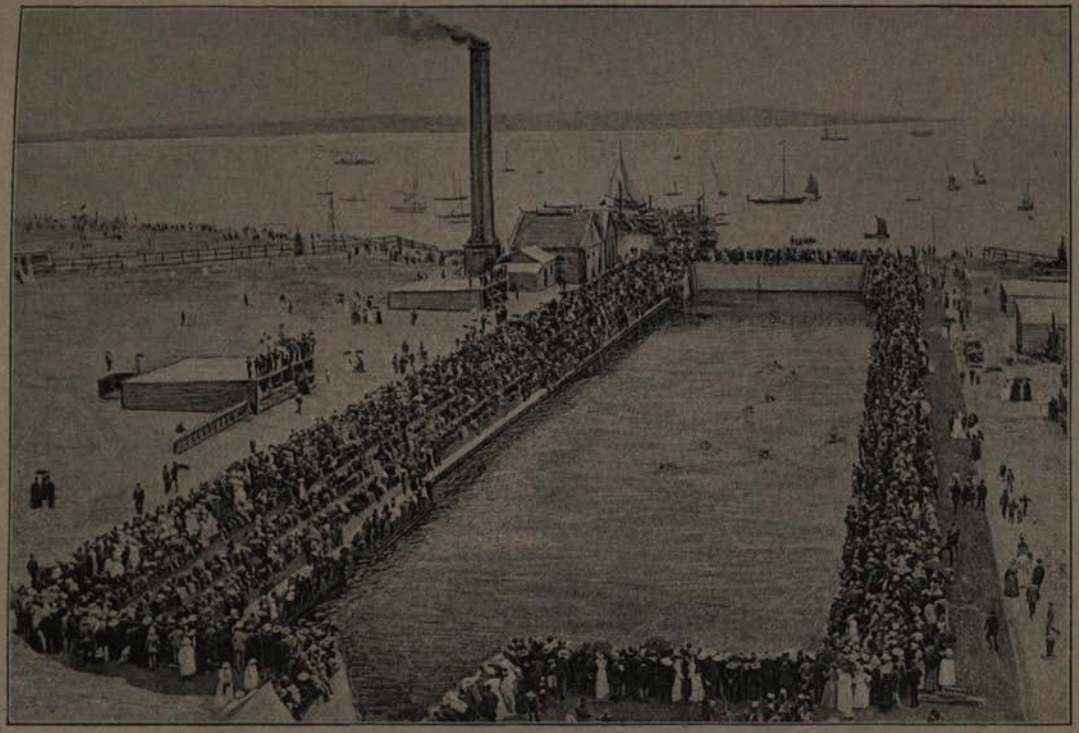
The representatives present at this conference were: from the Amateur Swimming Association—Mr. A. Sinclair (in the chair) and Messrs. H. Benjamin, C. Val Hunter, E. J. Tackley, and W. Henry; from the Northern Counties A.S.A.—Messrs. J. H. Fisher, C. Plumpton, W. J. Read, and C. Heywood; from the Midland Counties A.S.A.—Messrs. G. S. Powell, R. Willett, and T. E. Dugmore, Mr. Arthur Cook acting as hon. sec. The resolutions of the conference were agreed to by the respective district bodies, and the first general meeting under the new constitution took place in London on April 12, 1890. The association then consisted of one hundred and thirty-five clubs, seventy-eight of these being Southern, thirty-nine Northern, and eighteen Midland; the hearty support accorded to the North, for a new body, being most noticeable, and reflecting very great credit upon the ability of its organisers.

By this time the great increase in the number of clubs playing water-polo had cemented many friendships; the associations had doubled their membership, and the first international match between England and Scotland had been arranged. The various district bodies were free for energetic work near home, and rapid advancement towards consolidation was made. The first question was the government of swimming in Ireland. This delightful task had been left to the Southern

Association, but that body at once endeavoured to shift its responsibilities, and bring about the formation of an Irish association similar to the one in Scotland. In this effort it was unsuccessful, as the two great centres of swimming in Ireland—viz. Dublin and Belfast—could not be induced to amalgamate and promote the art throughout the sister isle. Mr. Arthur Cook, Bristol Leander, paid a special visit to both centres on behalf of the Southern Association, but, as in so many other Irish questions of far more importance, antagonism prevailed. Since then the Leinster Aquatic Polo Association has assumed sway in the Dublin district, and the Belfast Aquatic Polo Association in Ulster.

A good work accomplished in 1891 was the securing of official recognition of swimming as a subject of instruction in the elementary board-schools of England. For many years the Southern Association agitated for this, and after several deputations to the London School Board, the Education Department of the Privy Council agreed to recognise swimming as a subject under their code, whereupon the Association offered to place at the disposal of the London School Board the services of nearly one hundred honorary instructors, who, with the love of their pastime at heart, were willing to undertake the teaching of swimming to the young without fee or reward.

A New Zealand Amateur Swimming Association was formed in 1890 by Mr. R. St. Clair, of Auckland, on lines almost exactly similar to the English association, and appears to be a very healthy and well-managed body. This presently led to the formation of an association in New South Wales, the land of Gormley and Meadham, whose marvellous speed performances are from time to time flashed by cable to England. The New Zealand body is endeavouring to bring about the provision by education boards for organised instruction in swimming, to classify swimmers uniformly, to induce the State to issue certificates of proficiency, to promote a more general acquaintance with the steps taken to restore animation and effect rescues,



A SWIMMING MEETING IN NEW ZEALAND.

and to that end to give greater encouragement to long-distance events and life-saving competitions.

The A.S.A. has an enormous amount of work to perform. It has now nearly three hundred clubs affiliated to its district bodies, and from one end of the year to the other its honorary officers are ever busy. A deep debt of gratitude is due by swimmers to Mr. E. J. Tackley, of the Holloway Club, who acted as honorary secretary to the association from 1886 to 1893, for his unwearying efforts in its best interests. Very little support is accorded by the Press to swimming, and most of the work has had to be done personally by the representatives of the association, who, unaided by the light of publicity, have had to fight questions in remote parts under a cloud of misrepresentation and distrust. Very great improvement in this respect has been noticeable during the last two or three years, and now scarcely a single club gala passes unnoticed by the sporting press, with the result that abuses can be more easily checked, and breaches of the A.S.A. laws stopped. The association is thoroughly representative. It is a body of amateur swimmers, elected by amateur swimmers, and only legislating on behalf of its constituents. It protects their interests, compels unscrupulous promoters or clubs to pay the full value as advertised for their prizes, and to carry out their meetings in strict accordance with its regulations. Through its agency the tone of the sport has vastly improved, and instead of, as in the A.A.A., the last state of the amateur becoming worse than the first, the class and character of competitors are becoming better every day. Thirteen years ago at an amateur meeting it was necessary to get a friend to take charge of your clothes before you went out on the board. Prizes, when won, were often not forthcoming, and any paltry excuse for withholding them was deemed quite sufficient by the promoters. The A.S.A. cannot even now sort out the black sheep, but it can insist on the observance of order at meetings held under its laws, and gain for the decent amateur a certain amount of respect from fellow-sportsmen. As Oliver Wendell Holmes

says, the virtues of a sporting man are to brag little, to show well, to crow gently if in luck, to pay up, to own up, and to shut up if beaten. The A.S.A. when it gained the support of the University clubs put the finishing touch to a capital organisation ; and that it may remain in its present position is the wish of all its supporters.

CHAPTER X

THE UNIVERSITIES AND PUBLIC SCHOOLS

OXFORD

THE progress which swimming has of recent years made in the affection of public school boys has had a notable effect on the sport in general, and has tended very largely to raise the tone of the amateur organisations by introducing into the ranks of the more prominent clubs men fully imbued with the true principles of amateurism. Unlike the Amateur Athletic Association which was started by 'Varsity men, and afterwards opened out its membership to all and sundry, the Amateur Swimming Association has but recently gained the adherence of the better-class clubs. To Mr. A. T. Masterman, the president of the C.U.S.C., and the Rev. E. D. Finch-Smith, the first secretary of the O.U.S.C., is mainly due the credit of inducing the 'Varsities to take up swimming energetically, and to become affiliated to the governing bodies in their respective districts. Both of these swimmers had previously belonged to water-polo teams, Finch-Smith to Longton and Masterman to Tunbridge Wells, so that when they went up their sympathies had already been enlisted. A proper club had existed at Cambridge long before Masterman entered at Christ's, but nothing had been done towards the inauguration of Inter-'Varsity contests, although the presidents had from time to time exchanged challenges.

We considered it best, in view of the increased interest in swimming at the 'Varsities, to communicate with the respective

presidents or the time being, and to obtain from them a concise and authentic history of the swimming clubs at Oxford and Cambridge. Both at once kindly responded to our wish, and have assisted us to their utmost.

The history of the Oxford University Swimming Club is of necessity short. The club was started on May 22, 1891, mainly by the exertions of the first hon. secretary, Mr. E. D. Finch-Smith, Worcester College. The first president was Mr. A. M. Langdon, New College, who, when a pupil at Winchester, won the Ulph Challenge Cup at Yarmouth.

Before the club was founded swimming had not been in any way actively encouraged at the University. Races had at one time been held in the river annually under the auspices of the Boat Club, but these had latterly fallen through. Even now, although there are, as might be expected, many good swimmers in the University, there is but little 'keenness' exhibited in supporting races and competitions, but it must be remembered that the summer term ends in the middle of June, and the season for outdoor bathing can hardly be held to begin till the end of May.

It is true that in Oxford there is a swimming bath which the club always uses ; but the accommodation and fittings are not such as to attract bathers during the winter months, especially bathers to a great extent spoilt by the fine baths they have been used to at the public schools. It may, therefore, be fairly said that, except for a few keen spirits, the swimming education begun at public schools is little continued at Oxford ; a condition of things which appears likely to remain until some patriotic person or energetic company comes forward and presents the University and town with a really good swimming bath.

The club itself has chiefly restricted its action to the cultivation of water-polo, a game which is doing very much for swimming, and shows a decided tendency to become popular in the University under favourable conditions. In evidence of this the recent meeting of two colleges—Keble College, Oxford,

and Trinity College, Cambridge—may be noted (November 17, 1892).

It is noticeable that the Oxford teams have included many already distinguished in other forms of athletics, particularly in the rowing world; thus we find

R. P. P. Rowe Lord Ampthill W. A. L. Fletcher	Presidents of the Boat Club
F. O. Poole	A Rugby Blue
E. L. Collis H. E. Finch	Representatives of the University at running on 'the track,' and 'across country.'

Notwithstanding its short life, and the circumstances already mentioned as unfavourable to the working of a swimming club in Oxford, the O.U.S.C. may claim a certain amount of prestige, and look forward to the time when it shall become a leading University club.

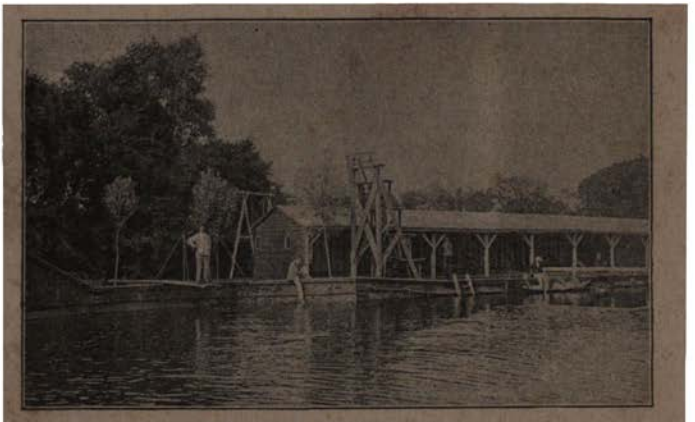
CAMBRIDGE

The Cambridge University Swimming Club seems to have been founded in 1855 when the bathing-shed on the Granta was built by the aid of public subscription, and as there are no baths in Cambridge at the present time, bathing is, of course, restricted to the summer. Various races were held in each May term, but the club took no active part in swimming until within the last three or four years, when the advent of water-polo brought about the first match with Oxford. The club is affiliated to the Midland District Association of the A.S.A., whilst Oxford is affiliated to the Southern District Association of that body. The bathing sheds at Cambridge are only used in summer, but there is a good scheme for a public bath now being promulgated, and if the matter be taken up energetically, it will doubtless result in material benefit to the club.

The bathing-shed is a long, low building, with a frontage of about one hundred and twenty feet to the river. It affords accommodation for about a hundred and twenty bathers, and

is provided with a committee-room. At the back of the shed is a large enclosed area of grass land, on which are erected horizontal and parallel bars, swings, hurdles, trapeze, &c.

There is a large diving tree with steps up to about fifteen feet ; running-header and spring-boards are also provided. The racing course has a fairly straight reach of 120 yards. All races up to 120 yards are swum down stream, and the stream is reckoned to make an average difference from bath swimming of about 5 secs. each hundred yards. Races of a distance over



THE C.U.S.C. BATHING SHED
(Photographed by A. T. Masterman, Pres. C.U.S.C.)

120 yards are swum over a course of 110 yards up and down stream to the required length.

There are three challenge cups competed for annually at Cambridge. The One Hundred Yards Cup was presented in 1887 by Mrs. Beevor, in memory of her son, H. M. Beevor, B.A., Trinity Hall, and the winners have been as follows :

		min.	sec.
1888	J. Birkett, Clare	1	15⅘
1889	E. E. Synge, Clare	1	6⅘
1890	G. W. Picton, Clare	1	12⅘
1891	A. T. Masterman, Christ's	1	5⅕
1892	H. W. Allason, Trinity Hall	1	4

The times quoted are, of course, not to be compared with those made in still water, but they seem to show general improvement.

The Quarter-Mile Challenge Cup was presented in 1873 by Mr. J. C. Miller, of Jesus College, and the winners since 1881 have been the following:

1881	E. M. Synge, Trinity	1887	S. D. Muttlebury, Trinity
1882	E. J. Robson, Christ's	1888	W. E. Forster, St. John's
1883	E. H. Rawlins, Peterhouse	1889	E. E. Synge, Clare
1884	M. S. David, Pembroke	1890	G. W. Picton, Clare
1885	W. Winslow, Caius	1891	A. T. Masterman, Christ's
1886	S. C. Baty, Peterhouse	1892	H. W. Allason, Trin. Hall

The Steeplechase (Land and Water) Challenge Cup was presented by Mr. E. H. Rawlins, of Peterhouse, in 1884, but until 1891 the race was decided on handicap terms. In 1891 it was made a scratch race, and was then won by G. W. Picton, Clare; but in 1892 A. T. Masterman of Christ's, then hon. secretary and now president of the club, was successful. The steeplechase in 1892 consisted of six flights of hurdles, a mud dyke, a number of loose barrels, a pegged-down tarpaulin—all on land—and about one hundred yards in water, with two barges to climb over, and three poles.

The first Inter-'Varsity match was arranged in 1891, shortly after the formation of the Oxford U.S.C., and was played at the Nautilus Entertainment, held at the Crown Baths, Kennington Oval, October 16, 1891, when Cambridge were badly beaten by four goals to one. The teams were as follows:

Oxford		Cambridge
E. D. Finch-Smith, Worcester	Forwards	E. A. Newton, King's
A. S. J. Grant, New		J. J. Guest, Trinity
A. M. Langdon, Capt., New		G. Elin, Trinity
R. P. P. Rowe, Magdalen	Backs	G. Francklyn, Trinity
W. A. L. Fletcher, Christchurch		A. L. Jackson, Clare
Lord Ampthill, New		A. T. Masterman, Capt. Christ's
W G. Hayter, New	Goal	G. W. Picton, Clare

In 1892 races were arranged in addition to the water-polo match, in which Cambridge were again beaten, but this time by five goals to one.

The meeting took place at Kensington Baths, London, on June 18, and the following were the results :

14 lengths, 406 yards

1. A. M. Langdon, New College, Oxon
2. H. M. King, Emmanuel, Cantab
3. G. W. Picton, Clare, Cantab
4. H. E. Finch, Keble, Oxon

6 lengths, 174 yards

1. J. E. Scott, Trinity, Cantab
2. A. T. Masterman, Christ's, Cantab
3. E. L. Collis, Keble, Oxon
4. W. G. Hayter, New College, Oxon

3 lengths, 87 yards

1. A. M. Langdon, New College, Oxon
2. H. W. Allason, Trin. Hall, Cantab
3. J. B. Hoare, Trinity, Cantab
4. R. P. P. Rowe, Magdalen, Oxon

Cambridge won by thirteen to seventeen points.

Water-polo : Oxford beat Cambridge, five goals to one.

TEAMS

Oxford		Cambridge
A. M. Langdon, New Coll., Capt.	Forwards	A. T. Masterman, Christ's, Capt.
R. P. P. Rowe, Magdalen		J. B. Hoare, Trinity
R. A. Andrews, Keble		H. W. Allason, Trin. Hall
W. A. L. Fletcher, Christch.	Backs	G. Francklyn, Trinity
E. L. Collis, Keble		H. M. King, Emmanuel
F. O. Poole, Keble		J. C. Graham, Trinity
W. G. Hayter, New Col.	Goal	G. H. Smith, St. John's

The Otter Club was the first to be entertained by the Universities. Its members competed in two open handicaps, distance 100 and 200 yards, at Cambridge, in June 1887. At

this meeting Mr. S. D. Muttlebury, who was then in residence, won on the first day the 200 yards and the half-mile, and on the second day the 50 yards, 100 yards, and 440 yards races, and also the 100 yards handicap from scratch. In June 1889, the Otter Club contested a series of matches against Cambridge, the programme consisting of 50 yards, 220 yards, and 440 yards races. The result was a draw. The 50 yards resulted in a dead heat, Mr. W. Blew Jones, Otter, won the 220 yards, and Mr. S. D. Muttlebury, Cambridge, the 440 yards. In June 1890, the Otters again journeyed to Cambridge, and after some very close racing were defeated by the Cantabs by three points. In October a return match was played at the St. George's Baths, London, and on this occasion the Otters were successful, winning by nine points. The first water-polo match took place the same evening, the Otters being victorious by three goals to two. In 1891 the Universities came more to the fore, and the hospital clubs at St. Bartholomew's and St. Thomas's were formed. Oxford University also joined in the fray, water-polo being primarily responsible for this. The annual races between Cambridge and the Otter Club ended in a win for the Otters by seven points, but the Light Blues won the water-polo match by three goals to one. This was the first match played at Cambridge, the open water was frightfully cold to the men accustomed to swim in a tepid bath. Cambridge did not come to town for return matches in that year, but the Otters went to Oxford in June and suffered defeat by five goals to one. Nautilus were also defeated, but in a return match in November the Otter Club managed to inflict upon the Oxford University S.C. team its first defeat at water-polo. They also won two inter-club races 46 yards and 93 yards on points. In 1892 Cambridge played matches with several clubs. They beat the Otters by four goals to *nil*, and dead-heated with them in the racing. Oxford beat the same club by two goals to one, but were defeated on points in the racing, although Mr. A. M. Langdon easily gained first place in each race.

ETON

The advantages of learning to swim when young cannot be over-estimated, and this has to a large extent been recognised by the heads of our public schools. In his excellent work on 'Health at School,' Dr. Clement Dukes, physician to Rugby School, and senior physician to Rugby Hospital, says :

I lay special stress also upon the value of the swimming bath and bathing. Every school that can possibly manage it should have a place in which the boys can learn and practise swimming. If there be a river, it may be utilised with advantage for summer bathing ; but it is not as good as a swimming bath under cover, the water of which can be warmed, and thus used all the year round. Swimming should be taught, if necessary, though as a general rule nearly every boy will learn by himself or from his schoolfellows.

As a careful perusal of the chapter on the 'Teaching of Swimming' will show, it is absolutely essential that a practical teacher should be appointed to every school. As a general rule a boy can learn by himself or from his schoolfellows, but he will rarely by this method become a perfect swimmer. Some very good suggestions are made by Dr. Dukes as to the arrangements of baths at public schools. He insists that the entrance should not be at the end from which the boys dive, a fault noticeable in many baths, and that it should be so guarded by a porch as to prevent the wind coming in with a direct rush.

With boys particular care should be taken that they do not stay too long in the water. They can bathe as often as they like provided that they are in good health, and that the plunge is not taken too soon after a meal ; but the stay in the water should not be long. Unfortunately, the initial plunge is so exhilarating that boys are wont to stop in longer than is desirable, and very often do not come out until they are shivering with cold. To this may be attributed many of the evil effects which parents complain of as the result of their children bathing in baths or open water, and as the remedy is easy—the

appointment of a competent official to supervise—stringent rules should be laid down governing the length of stay in the water.

The teaching and practice of swimming at Eton differs from that which prevails at most other schools, in so far that it is entirely carried on in the open river, as there is no swimming bath. Swimming and its natural accompaniments, the taking of 'headers' and diving, have no doubt been popular at Eton from days too early to admit of any record; it could hardly be otherwise, seeing that the greatest of English rivers flowed at the very doors of the school. But no systematic attempt to teach swimming seems to have been made till the year 1839. In that year, owing to the death by drowning of a boy named Montagu, who was dragged out of his boat by a barge rope, the idea was started of teaching swimming systematically, and requiring all boys to pass an examination in it before they were allowed to go in a boat upon the river.

The originators of this scheme were George Augustus Selwyn, then a private tutor at Eton, afterwards successively Bishop of New Zealand and Lichfield, and William Evans, a member of an old Eton family and teacher of drawing in the school. They prevailed upon the then head master, Dr. Hawtrey, to establish the rule of compulsory 'passing' on all those who wished to row. So far as the writers can discover, before this time the instruction in swimming, if given at all, was given in the most casual way by waterside men, and the places for bathing were both ill-defined and unguarded. Collegers were supposed to bathe at 'The Oak,' a place in the playing-fields well known to all Eton men, and rendered dangerous by strong cross currents. Oppidans bathed higher up the river, between the two points locally known as 'The Hopes.' It followed as a necessary consequence from the above-mentioned rule established by Dr. Hawtrey that the whole system of bathing was organised. Regular bathing places were constructed, one in a shallow backwater known as Cuckoo Weir, which was suitable for young boys and those who could not swim; watermen were appointed, wearing a special dress,

and charged not only with attending to the bathing-places, but with watching the river and preventing accidents which might happen from boys being upset. At the same time the supervision of all these arrangements was put by the head-master into the hands of Mr. Selwyn. His successors in this office up to the present time have been Mr. Harry Dupuis, Mr. W. A. Carter, Dr. Edmond Warre, and Mr. Walter Durnford, who has kindly furnished much of the information about the school.

For purposes of 'passing,' the master in charge associates with himself a few other masters who are interested in the matter. The practice of 'passing' is carried on as follows. As soon as the water becomes warm enough, generally about May 20, notice is given that a 'passing' will be held at Cuckoo Weir. Thither go all the boys who have come since the previous summer, and who think that they can pass the test, which consists of swimming on the chest a distance of about 250 yards, treading water, and swimming on the back. Much attention is paid to style, and many boys 'pass' at once, for the teaching at some of the preparatory schools is now extremely good. The same performance is repeated once or twice a week during the summer schooltime, and by degrees a large number of those who could not swim at the beginning of the summer—'non-nants' as they are technically called—succeed in passing. The average number of those who pass in any given summer is about two hundred. It must be admitted that the system established in 1839 has proved successful, for since that date only one Eton boy has met his death by drowning, and in that instance, the boy, a strong and expert swimmer, was drowned from causes which no care could have either foreseen or provided against. This is the more remarkable because the pleasure traffic on the Upper Thames has now reached proportions which, twenty years ago, would have seemed impossible, and the presence of so many people of both sexes unable to manage a boat, ignorant of their own danger and of the danger they cause to others, constitutes a real peril, which is largely increased by those plagues of our Upper Thames, carelessly managed steam launches.

At present there are four recognised bathing places for Eton boys; Boveney Weir, perhaps the best bathing place on the river, but one which should be used only by good and practised swimmers, owing to the strength of the stream and the uncertain set of the eddies; Athens, where the mass of the big boys bathe; Upper Hope; and Cuckoo Weir, which has already been described. The taking of 'headers' has always formed a characteristic feature of Eton swimming, and the tradition of good headers handed on for fifty years or more has always been maintained. A famous exponent of this art as a boy, in recent years, was Lord Harris, now (1893) Governor of Bombay.

HARROW

Harrow is famous for its swimmers, and its swimming-pond, termed the 'duck-puddle,' is one of the finest open-air baths in England. All the boys are obliged to learn to swim, except, of course, those forbidden to bathe by the doctor, and the masters take a very great interest in the progress made.

The bath itself is almost unknown to swimmers outside Harrow School, as it is of course kept entirely for the use of the boys; but the present water-polo champions of England, the Nautilus team, who played an exhibition match there last season, were charmed with the appearance and appointments of this famous open-air bathing-place.

According to the Rev. B. H. Drury, the 'old' duck-puddle was just past the stile at the entrance of the third field from the present duck-puddle, as you go eastward towards Woodcock, or Woodcote, Hill; a pond of oblong figure, divided in the middle by a bank reaching nearly across from side to side, one division being deeper than the other. It was fed by a ditch, and was called 'the dyke.' This same watercourse afterwards supplied the 'new' duck-puddle.

From a copy of the 'Harrovian,' kindly sent us with much other valuable information by Mr. A. F. Hort, M.A., the treasurer of Harrow School Bathing-place, we have gleaned

some very interesting details about the history of the spot which retains the quaint and time-honoured title of 'duck-puddle.'

It appears that early in the present century Dr. George Butler, then head-master, took great interest in the matter, and through his agency a new bathing place was provided. The Rev. J. E. Gray, who entered the school in 1811, says. 'The paling was then good, the benches good and new, and the shrubs so juvenile as scarcely to be a hiding-place from passers-by along the lane.' The bath was then rarely cleared, but when this was done the fence was removed in order that the mud might be thrown into the adjoining field.

This bath was allowed after a time to get out of order, and many of the boys found pleasure in the Brent, at Perivale, as well as in other cleaner waters. In 1825 a fatal accident occurred in the bath to the son of Sir C. Lemon, who apparently succumbed to an attack of apoplexy when in the water. This, we believe, is the only tragic event that has happened in Harrow bathing place—a fact which speaks volumes for the care exercised when the boys are bathing.

The Rev. B. H. Drury relates a laughable incident which occurred about this period :

> I remember (says Mr. Drury) one occasion when there was great excitement among the lower boys in our house, caused by the report brought up from Billy Warner (a well-known and not altogether reputable character of those days) that, the water being off, the mud was full of eels. After two o'clock bell, we ransacked the kitchen for dinner-forks, and, so armed, ran down to the scene of our expected sport, and rushed into the mud, sticking in the forks wherever we suspected the eels were lying. I do not remember that we even speared one.

It would appear, moreover, from the Contio of 1826 that, in addition to eels, there were plenty of frogs and water-rats to be found in the pool. The writer of the article in the 'Harrovian' says, 'Surely the newts of to-day are but degenerate representatives of such progenitors.' The sides of the

bath were at this time of earth, and the bottom consisted of mud. There were no sheds, and many of the boys bathed in the canal for preference; but, as an old Harrovian aptly remarks, 'The fact that the canal was out of bounds added zest to the bath.'

The son of Sir Robert Peel learnt to swim in the duck-puddle at Harrow, and the knowledge there gained served him in good stead in after-life, when shipwrecked by night in the Mediterranean. The great Sir Robert Peel was himself an Harrovian, and had Lord Byron for form-fellow and friend. It is more than probable that Byron here gained that ability as a swimmer of which he was so proud.

When Dr. Vaughan took charge of the school he soon caused 'duck-puddle' to be renovated; the sides and bottom were paved, the top of the banks was slated over, dressing-sheds were erected, and the water was supplied from an artesian well. In 1851 a caretaker was appointed, and a cottage built for him, and the lion's head was placed at the lower end of the bath.

One of the senior masters of the school, Mr. G. F. Harris, superintended the bathing about this period, and to his energy the vast improvements which have been made in the bathing place during recent years are largely due. A certain sum—being the surplus of receipts from the boys' parents over expenditure—was annually set aside by him and his successor, Mr. A. G. Watson, as a reserve for repairs, &c.; and when this in 1878 was found to amount to twelve hundred pounds, it was felt that the time had arrived when an enlargement of the bath—which was then totally inadequate for the bathers—could be made, and a good supply of fresh water obtained from the town waterworks.

The scheme was quickly taken up, and the necessary funds rapidly obtained. Sir John Fowler, C.E., supplied the plans, and superintended the works gratuitously; and on May 28, 1881, the new bathing place was opened by Dr. H. M. Butler, who throughout heartily co-operated in the work. It is to

Mr. A. G. Watson that the carrying out of the final improvements is largely due. He was in command for many years till 1891, when he resigned his mastership, and it is to him that we are indebted for the article in the 'Harrovian.'

Some idea of the vast improvement made can be gleaned from the following facts. The old bath was 230 feet long, and averaged 49 feet in width ; the present bath is 500 feet long, with a maximum width of 100 feet and an average width of 60

PLAN OF HARROW BATH

feet. The bottom and sides of the old and new portions are now lined with Portland cement, and the surrounding path is laid with asphalte instead of slates as before ; the water area was increased from 11,360 feet to 31,000 square feet. A glance at Sir John Fowler's plan will show that a system of movable lock-gates allows of the bath being emptied, cleaned, and refilled without stopping the bathing, a thing which was before utterly impossible. In the old days the necessity of emptying the whole of the bath for cleaning purposes frequently

prevented the boys from bathing in the middle of the summer term.

The depth of the bath varies from about 3 feet 8 inches at the ends to 6 feet 1 inch near the bridge, which crosses the bath almost at its centre; this bridge, which is of iron, has a span of 43 feet.

We cannot do better than finish this brief history of 'duck-puddle' by quoting the verses composed in its honour by Mr. J. Robertson, then a master at Harrow, and afterwards head-master at Haileybury College, who evidently loved the old pool. The last four lines of the second poem will no doubt bring back pleasant memories to many old Harrovians.

BALNEA REDIVIVA

Quos hodie latices late se extendere cernis,
His anatum dederat nomina prisca genus.
Scilicet, angustis per longos finibus annos
In parvis soboles parva natabat aquis.
Tempore provehimur provecto;—grandior undas
Excipit exiguas exsuperatque lacus.
Poscimur,—ingenui proles robustior ævi,
Nos quoque ut illotis præniteamus avis.
Anseribus cedunt anates; generosior ætas
Prodiit,—at nomen relligione manet.
His quoque nobilior, Musis ridentibus, olim
Fors erit in fatis exoriatur avis.
Fallor, an ordinibus jam sero adscripta deorum
Non nisi cycnæos proferet Herga modos?

Translation

These waters widened to so fair a space,
Were named of old from but a humble race;
Beyond a doubt the ducks, whose lowlier brood
Were then its tenants, sought no broader flood.
But time drives on;—the pond of duck and drake
Developes, *à la* Darwin, to a lake;—
And to outshine their dim forefathers, these
(Pardon the thought) perhaps may pose as geese—
A fowl more lordly;—yet old Ducker's name
For auld lang syne's sake shall remain the same.

Perchance, when the progressive stage is past
And Herga dies, if die she must at last
In nobler plumage found she shall arise
And seek, on wings of swan-like dirge, the skies.

1881. J. R.

THE SCHOOL BATHING-PLACE

They've done with the mud and the muddle,
The rubbish is all cleared away;—
Once more are the waves of Duck-puddle
Restored to the light of the day.
The sweep of her waters is wider;
Her basin is full to the brink,
And the seats all round and beside her
Are marble,—I think.

The bath of the stars in the ocean,
The tub of Achilles in Styx,
And those we still view with emotion
In Rome, and her ruins of bricks;—
Each temple of human detergency,
Each new ablutional throne,
(Except in some case of emergency)
Yields to our own.

There's islands, and arbours, and bridges,
And branches to shade from the sun,
And palings to keep out the midges,
And sheds where you munch at your bun,
And ladders exalted for diving,
And corners for perching you up
At ease, while your neighbours are striving
In vain for the Cup.

How sweet, when the Summer rejoices
The heart with the glow and the breeze,
To plunge in the pool while the voices
Are ringing from under the trees.
Ah! long in the sober hereafter
Shall linger in ears far away
The sound of that innocent laughter,
The splash of the spray.

1881. J. R.

The present competitions carried out at Harrow were mainly inaugurated by Mr. Watson. As should be the case, the Royal Humane Society's medal for the boy who exhibits the best knowledge of the methods of life-saving is considered the highest award, and his name figures above the 'Dolphins' on the annual printed list given to the boys whose names appear on it, and posted in bathing sheds, houses, &c. House races are held between teams of three from the various houses. These representatives, who are drawn in pairs for the races, are termed 'Ducks.' The same plan is adopted in the Junior House races, the representatives in this case being under sixteen years of age, and distinguished as 'Ducklings.'

There are various ordinary races, both senior and junior, and competitions in diving, headers, and diving for china eggs. The chief race is that for the 'Ebrington' challenge cup.

The best swimmers are called 'Dolphins,' and to attain this distinction, to which special privileges are attached, a very stiff series of tests has to be passed. They are as follows:

1. Header from high running-board.
2. Swimming five lengths of the bath, distance about half a mile.
3. Swimming in twenty minutes.

This swim must be in three styles, viz.:

(*a*) Breast-stroke.
(*b*) Back-stroke.
(*c*) Side-stroke.
(*d*) Diving under a hurdle during the swim.
(*e*) Climbing out on to the lowest running-board (without touching the side of the bath), and taking a fair standing header in again during the swim.
(*f*) (At a different time.) Diving for, and bringing to shore a dummy, to represent a drowning man.

Failure in any *one* or comparative failure in any *two* of these tests involves a 'pluck.' Many of the 'Dolphins' have afterwards figured prominently in the swimming world, and it is interesting to note that the names of the Cantabs, Messrs. H. W. Allason and J. B. Hoare, who represented their 'Varsity against Oxford last year, both appear in the 'Dolphin' list of 1889.

RUGBY

To Dr. Clement Dukes, of Rugby School, is due the institution of the life-saving competitions for public schools, promoted by the Royal Humane Society. This gentleman in 1882 communicated to the R.H.S. his opinion that swimming from a life-saving point of view could be greatly fostered by the holding of contests at public schools, and the Society took up the scheme warmly and established a series of medal competitions. Their area of operations is limited to the leading schools and the training-ships, and they do not insist upon a knowledge of the various resuscitation methods being compulsory. Dr. Dukes was rewarded a few years later by his nephew saving the life of a schoolfellow who, while bathing had been drawn into a sluice.

It was considered outside the province of the R.H.S. to organise a competition in resuscitation methods, but Dr. Dukes evidently considered such a competition desirable, for he aptly remarks in the work previously referred to, 'But while these rescues by swimming restore the victim to land, I should like to see him restored to life,' and in pursuance of this idea he presented to Rugby School a challenge cup for the best practice in the resuscitation of the apparently drowned.

At Rugby there is a covered tepid bath 70 feet by 25 feet, water measurement. It is 6 ft. 6 in. deep at the deepest end, and 3 ft. 6 in. at the shallow end. It was erected in 1876, as a gift by the then head-master.

The boys are not compelled to learn swimming at this school, but if they desire to be taught they are placed under the care of the swimming instructor in charge of the bath. The bath is open each of the three school terms, the boys being allowed to bathe between 6.15 and 7 A.M., and once again during the day. Those learning to swim are only allowed in the bath at certain times, but there is a 'club,' the members of which, in addition to the Sixth Form, are allowed to monopolise the bath from 6.30 to 7.30 P.M. on Tuesdays, Thursdays,

and Saturdays. The boys get into the club after passing one of the following tests :—Swimming ten lengths in 6 mins., or one length (70 feet) under water. Besides the competitions for the Royal Humane Society's medal and the challenge cup for restoration of the apparently drowned, there are swimming races and diving competitions at the end of the summer term. Among these is a race for beginners, which always produces an interesting struggle. There is an open race of ten lengths; and another of six for younger boys. The competitions consist of 'pence-diving,' and swimming under water. In this last, in 1877, E. M. D. Whatman swam two lengths and a turn of about ten feet.

Year	Winners of Royal Humane Society's Silver Medal	Winners of Challenge Cup for Restoration of the Apparently Drowned
1882	M. B. Castle	C. K. Burton
1883	W. Henderson	M. B. Castle
1884	P. M. Sykes	A. J. Sykes
1885	B. Wild	B. Wild
1886	H. A. Leverson	B. Wild
1887	M. M. Litkie	M. M. Litkie
1888	W. H. Rhodes	E. R. Salisbury
1889	J. W. Topham	C. H. Rowlands
1890	J. W. Topham	J. N. Gardiner
1891	E. J. Munby	P. C. Grover
1892	P. C. Grover	H. R. Fletcher

UPPINGHAM

Uppingham is another of the big public schools at which swimming is considered as of the highest importance.

In early days there were two recognised bathing places, namely, the brook near Stockerston, two and a half miles away, and the Welland, near Thorpe, four miles away. The former was poor, the latter gave good bathing. Later, a respectable bathing place was made by the Stockerston brook, with dressing shed, conveniences, and an instructor was appointed. In 1883 the covered swimming bath was built. The bath itself is 90 feet long, 25 feet wide, and varies from 3 feet to 6 feet in

depth. All boys, except those who claim exemption under medical advice, are taught to swim. The Humane Society's medal for proficiency in life-saving exercises was first competed for in 1884, and has been given yearly since that date. The bath is supplied with water from the Uppingham Waterworks Company, and is kept heated to a temperature of about sixty degrees. It is kept open as nearly as possible all the year round, but this depends on the water supply. Generally it has to be closed in December, January and February.

Races and competitions are held yearly about Easter. The following are the events :

Quarter-mile.—All ages.
120 *yards.*—All ages, and under sixteen.
Running headers.—All ages, and under sixteen.
Distance diving.—All ages, and under sixteen.

And the R. H. Society's Medal Competition.

ROSSALL

Considerable attention is given to swimming at Rossall. Some years ago a melancholy accident, resulting in the drowning of a boy, immediately caused the then head-master, the Rev. H. A. James, to take action. The Rev. Anthony A. Cordner, M.A., master of the baths, thereupon drew up a set of regulations, which have been in strict operation ever since. The result has been highly satisfactory, for since their formulation there has never been the slightest accident or even momentary insecurity among the hundreds of boys who bathe in the swimming baths, or in the open sea. The following are the regulations :

1. Every boy (unless specially exempted on medical grounds) must practise swimming on half-holidays in the summer term, until he can swim the length of the bath, 40 yards, ending at the deeper end, where the depth is 7 feet.

2. No boy may bathe in the sea until he has obtained his first-class swimming certificate, which must be signed by the sergeant instructor of swimming, and by the honorary master of the baths.

3. The tests qualifying for this certificate are as follows:

(1) Each candidate must swim, at the same attempt, eleven laps of the bath, or 440 yards. Of these laps, three must be swum on the back; the whole distance must be completed within twelve minutes.

(2) When starting, the candidate must dive from the platform at the deeper end, which is 6 feet high, and swim under water for 15 yards.

(3) After completing the required distance, he must, before leaving the water, float without using his arms or legs for three minutes, and 'tread water' for two minutes.

Addenda

(*a*) If a boy satisfies the instructors in the above tests, he has the privilege of wearing special bathing-drawers, blue and white.

(*b*) Not less than three boys may bathe together in the sea, and they must leave the water at the same time.

(*c*) Before bathing in the sea, it is also necessary for each boy to have a further written permission from his parents, from the head-master, and from his house-master.

Note.—Usually about 50 boys out of 350 pass this test.

At Winchester, Cheltenham, Sherborne, Tonbridge, Shrewsbury, Merchant Taylors, Highgate, Charterhouse, Dulwich, Royal Naval School, Marlborough, Wellington, Clifton, Royal Military College, Oundle, Weymouth, Surrey County, Newton, &c., &c., swimming competitions are carried out and the pastime is encouraged.

In many of the board schools of this country swimming is now taught, and numerous private schools are provided with swimming baths. It is even fostered in union schools, and some of the exhibitions by scholars of both sexes witnessed by us in different parts of the country, such as at Mossbank, near Glasgow, and Portsea, have been remarkable. The growth of interest in the pastime is undoubtedly due in a large measure to the increase in the number of honorary swimming teachers since the passing of the Baths and Washhouses Act made it possible for lads residing in inland towns to be taught cheaply,

and to those public-spirited gentlemen amateurs who have for years undertaken the teaching of school children the thanks of the entire community are due. London is really far behind some other cities in its general instruction to children, and although successive London School Boards have dabbled with the question, nothing definite, beyond the recognition of swimming as a branch of physical education under the code, has been officially done.

The Physical Education Committee of the last School Board for London caused a most exhaustive and valuable report to be compiled on the bathing accommodation obtainable in the metropolis. They even went so far as to make arrangements for the teaching of swimming in the schools under their control, and for the building of baths in connection with schools in districts where public baths did not exist; but upon the election of the present Board (1893) a retrograde movement was at once made, and the whole scheme rejected. While the official heads of the Board have thus played with the subject, the masters themselves have done excellent work. In the south of London competitions and classes are frequently held, and in the north the School Teachers' Association has been able to give free instruction to hundreds of boys in Victoria Park lake. Many of the amateur clubs provide teachers and give for both boys and girls contests during the year, and the Southern Counties Amateur Swimming Association, by reason of the gift of a shield by the Cygnus Club and presentation medals from year to year by the Otter Club, has been able to carry out a team championship for London public elementary schools. In some of the South London schools the drill of the Life-saving Society is also taught, and a number of the boys attending those schools have passed the examinations and tests for the proficiency medal of the Society.

CHAPTER XI

MANAGEMENT OF SWIMMING MEETINGS

THE general management of swimming meetings, especially those that are held in baths, has vastly improved during the last four or five years. All unaffiliated clubs and managing bodies must obtain a permit from the Amateur Swimming Association before attempting to hold a race meeting, otherwise the amateurs who compete disqualify themselves from taking part in races held under the laws of the Association until such time as they are re-qualified. It is, therefore, the first duty of the promoting organisation to apply for a permit. If granted, the fact should be stated on all entry forms, posters, advertisements, &c., so that swimmers may be made aware of the fact that the meeting has been duly registered. The responsible official of a meeting is the secretary, and it is necessary that a trustworthy man should be selected. His acquaintance with swimmers and swimming in general should be as wide as possible.

It is advisable to definitely fix the date of the meeting some time in advance, and to secure the bath, so that after the preliminary announcement there may be no need to change the venue or date. In the case of open water the tides have to be considered. Very great care should be taken to avoid clashing with another gala in the same district, as otherwise both may result in financial failures.

About a month before the gala the meeting should be well

advertised, the preliminary announcements detailing the number and minimum value of the prizes for each open event, stating the date on which entries close, the amount charged as entrance fee for a race, and the price of admission to the baths.

Everything possible should be done for the comfort of competitors. It is a short-sighted policy to let them undress in any wretched ill-ventilated room so that more spectators can be accommodated, because the good-class men will abstain from entering the next season. It is not necessary to provide a 'drawing' room for them, but a decent dressing-room adds greatly to the popularity of any individual club's annual gala. The arrangements made for the accommodation of competitors at open-water meetings, particularly in the sea, are perhaps the worst; they are sometimes required to undress in small cabins reeking with filth, down under dirty mackerel boats, the bottoms of which are covered with water, so that the clothes cannot be put down without being wetted; in antiquated and disused beach shelters or riverside toll-houses, in which all shades and denominations of insects delight to congregate, and even in open boats in dirty weather. This sort of treatment is certainly not calculated to inspire a love for the particular meeting at which it is meted out.

If teams come from a distance, they will much appreciate being met at the station by one of the officials, taken to the baths so that their whereabouts may be known, and indeed, if funds permit, they may well be entertained at the expense of the club. These little courtesies are not soon forgotten, and once a club becomes popular, it can always rely on support from swimmers outside its own members.

The racing laws of the Amateur Swimming Association must be thoroughly understood by the club committee. The officials appointed should all be practical men. In the case of the judge, starter, and timekeeper, they should be men of wide experience, well versed in the racing laws, cool, and determined. It is sheer nonsense to appoint a man to a

responsible position of this character simply because he happens to be president or vice-president of the club, without any other qualification. All the officials should be appointed some time before the gala, so that no difficulty may be experienced at the last moment. Every one of them should be notified, and their consent obtained.

The duties of starter and timekeeper should be vested in one official, unless the races are started by report of pistol, as in our opinion all scratch races in open water should be. There are two or three systems of starting and timing handicaps in vogue in England. That adopted by the Northern Counties Association finds very great favour. In order to explain it, we give the copy of a portion of the handicap for an open race held by the Liverpool Gymnasium Club on September 1, 1890 :

FOUR LENGTHS FLYING HANDICAP

FIRST IN EACH HEAT TO SWIM IN SEMI-FINAL

Heat 1

1.	J. A. Douglas	go.
2.	J. G. Ker	3
3.	A. Sparling	6
4.	T. Woodhall	7
5.	R. A. Crawshaw, Manchester	16

Heat 2

6.	E. F. Asgill, Oldham	4
7.	T. Bowen	6
8.	J. Doherty, Manchester	8
9.	R. Mitton	9
10.	C. J. Lenton, 100 yards champion	18

In this race the scratch man was No. 10, C. J. Lenton, of Liverpool, then 100 yards amateur champion of England, and the limit man of the whole handicap was J. A. Douglas, No. 1. The start which Douglas received from Lenton was eighteen seconds, and therefore it correspondingly follows that the starts

received from Lenton by the other men were the differences in seconds between the numbers placed against their name and eighteen seconds.

By means of this system it is claimed that the times of the men are better obtainable, and the chances of bad handicapping less. In starting such a race the word 'go' is only used for the actual limit man or men. The starter calls out the seconds on his watch, one, two, three, and so on, and as each man's start is reached he at once plunges, hence the term 'flying handicap.' In order to stop men plunging before their time, a check starter is now appointed. To arrive at the actual handicap time—that is to say, the time the scratch man would have to accomplish in order to win the heat—the number of seconds the limit man receives from the scratch man has to be deducted from each heat. Thus, in the case quoted, if Crawshaw won the first heat in one minute, his actual time would be forty-four seconds, and the handicap time forty-two seconds. If Lenton also won his heat in one minute, the handicap time and scratch man's net time would be the same as the handicap time in the first heat, and a capital race might be expected between the two heat winners when they met.

The South of England style of starting is entirely different, as the starts are shown on the programme in the ordinary method, and the starter has to frame a back handicap after he receives the programme—an entirely useless piece of work. For the sake of comparison we give a copy of a handicap decided at Portsmouth on August 4, 1890:

NO. 1, AT 10 A.M.

FIFTY-FIVE YARDS LADY MEMBERS' HANDICAP

3 prizes

1. Miss S. P. Aylen . .	scratch	5. Miss G. Innes . .	10 secs.
2. ,, B. Ash . . .	3 secs.	6. ,, Glasspole . .	10 ,,
3. ,, O. Couzens . .	6 ,,	7. ,, M. Gardiner . .	12 ,,
4. ,, D. O'Niel . .	8 ,,	8. ,, J. Skeens . .	18 ,,

1st	2nd	3rd	Time	Secs.

If started in accordance with the recognised Southern method, a back handicap would have to be framed for this race, and would read as follows :—

Miss J. Skeens	0 secs.	Miss D. O'Niel	10 secs
,, M. Gardiner	6 ,,	,, O. Couzens	12 ,,
,, Glasspole	8 ,,	,, B. Ash	15 ,,
,, G. Innes	8 ,,	,, S. P. Aylen	18 ,,

The times under this system are of course untrustworthy for comparison and very misleading, but an improvement has been introduced by some starters, who frame a back handicap from the actual limit man of the handicap, instead of the limit man of each heat. They can then, of course, easily arrive at the handicap time.

Another system of starting and timing is the one used for ordinary cross-country handicaps, and its advocates claim that it is the only correct plan of starting a race. Its advantage is that the handicap time is ascertainable at once, but, on the other hand, the disadvantage of having to delay a start till the hand of a watch runs round to a certain portion of the dial more than counterbalances this. The following tables will explain the system :—

Programme		Starter's Book	
Lenton	scratch	Asgill	46 secs.
Mitton	9 secs.	Bowen	48 ,,
Doherty	10 ,,	Doherty	50 ,,
Bowen	12 ,,	Mitton	51 ,,
Asgill	14 ,,	Lenton	zero

It will be noticed that in the heat quoted as an example the second hand of the watch would be run round to forty-six seconds before the limit man was started, and that when the hand reached sixty seconds the scratch man would receive the word to 'go,' and the actual timing of the race would start from the scratch man. This is a splendid system for cross-country running or a long-distance swimming handicap, but in sprint swimming the Northern style is preferable, as no time is lost between the heats, an all-important factor when the meeting is prolonged to a late hour.

Every timekeeper should be the possessor of a good watch, and one that has been well tested. He must be an expert, and if record is expected to be approached at the meeting, the services of a recognised competent official should be secured. If record be beaten, the distance should at once be carefully checked and certified by a surveyor, so that when claiming the record full evidence in support of it may be tendered.

From Mr. Roland St. Clair, the honorary secretary of the New Zealand Amateur Swimming Association, we have received particulars of an ingenious automatic handicap starting and timing machine, used by the Auckland Club and invented by a Mr. Bartlett. Around the dial of the clock, which is placed at the winning-post, are arranged sixty buttons, corresponding to sixty seconds. By depressing any of these, connection is made with a bell placed at the starting-post, which rings accordingly, and by this means any number of competitors in a handicap race may be sent at intervals of a second, as required. The bell may be taken any distance from the clock. When the winner touches the tape the clock stops. The instrument is being perfected to register the time when each competitor finishes. Some system such as this is bound to replace the ordinary timekeeper in the years to come. An electric timekeeping machine was tried unsuccessfully in England some time back, but in these days of progress nothing seems impossible.

In order to secure entries the members of the committee should visit the galas and swimming races held just before the date fixed for the closing of the entries, which should be at least a week before the meeting, and personally invite those swimmers whose entries would be acceptable. In every case the official entry form should be filled up, and the entry fee taken, otherwise the A.S.A. might be placed on the horns of a dilemma when desirous to deal with any infringement of its laws by the person entering. It is essential that a recognised public handicapper be employed, because if it be made known that the handicap is to be framed by a popular man

the entries are more likely to be numerous, and the racing good.

The small amount of gate money obtainable at swimming meetings held in enclosed baths has been a great drawback to clubs holding open races or engaging in water-polo matches. The continued drain upon club funds leads to a state of insolvency, and many organisations have for that reason been compelled to abstain from holding open competitions. In order to carry out a large meeting successfully, endeavours should be made to obtain donations to the prize fund. For many regattas a systematic plan of obtaining subscriptions from the tradesmen of the town is adopted, but very often a club can obtain substantial aid in this matter by appealing to its own honorary members. The ladies' prize is a very successful institution. The sister or wife of a member takes charge of the fund, and collects subscriptions from the lady friends of the members.

The prizes should all be bought before the meeting, and the full advertised value given for them. If possible, they should be exhibited in some prominent part of the town.

Tickets of admission should be on sale some time previously. A week before the meeting a ticket of admission should be sent to the principal papers, and a day or two before some particulars as to the entries and general arrangements. These should be written out in form ready for publication, as they are more likely to be inserted than if they require editing. They should not be too long—in fact, the briefer they are the better.

A ticket of admission should also be sent to every competitor and official. On each ticket full and precise directions as to venue, time of meeting, and date, should be stated, and, if possible, the nearest station or conveyance.

Some music is desirable. Either a string band or a piano and pianist will do. A brass band inside a covered bath is a perfect nuisance.

We now come to the arrangements for the day of the

meeting, the preparation of programmes, and the supervision of the attendants. The entry forms should have been sent to the handicapper immediately the entries closed, with a list giving name, club, and colours of each entrant affixed to them. They should have been received at least three days before the meeting, and the work of preparing the programme then begins. Every possible information should be afforded by the programme. If the handicap be framed from a nominal scratch man—that is to say, a better man than any of the competitors entered—that man's name should appear at the head of the handicap, so that the spectators may not be misled.

The following specimens are from programmes of meetings held under the auspices of the Amateur Swimming Association :—

7.50 p.m. INVITATION PLUNGING HANDICAP

TWO PLUNGES ALLOWED. BEST TO COUNT

Four Prizes.—First, entrée dish ; second, candle lamp ; third, case salt-cellars ; fourth, opera-glasses. Special prize for the best plunge by an unplaced novice, that is, one who has never received a prize for *plunging*.

No.	Name	Club	Handicap	Distance		Total
				1st dive ft. in.	2nd dive ft. in.	
1	W. Jenkins	Zephyr	Scratch			
2	E. W. Stafford	Lewisham	6½ ft. start			
3	T. Crafter	Blackheath Harriers	10 ,,			
4	S. T. Dadds	Lewisham	10 ,,			
5	W. Smith	Lewisham	11½ ,,			
6	P. G. Ebbutt	Croydon	13 ,,			
7	H. H. Griffin	Ranelagh Harriers	17 ,,			

68 YARDS INVITATION HANDICAP (Two Lengths)

Four Prizes.—First, revolving breakfast dish ; second, oxidised and gilt vase ; third, travelling clock ; fourth, aneroid barometer. First in each heat to swim in second round.

8.20 *First Heat*

1. S. P. PUGH .	S.E. London .	2 secs. start
2. C. TEES .	Introduced .	5 „
3. C. RAMSAY .	St. John's .	10 „
4. WALTER SMITH .	Lewisham .	15 „

1st Time

8.23 *Second Heat*

5. A. H. HIGGS .	Norwood .	3 secs. start
6. H. DAVY .	S.E. London .	5 „
7. W. SMITH .	Lewisham .	11 „
8. H. R. WARNER .	St. John's .	17 „

1st Time

TWO LENGTHS INVITATION HANDICAP (SECOND ROUND)

FIRST IN EACH HEAT TO START IN FINAL

9.20 *First Heat*

Winner of Heat 1 .....

„ „ 2 .....

„ „ 3 .....

1st Time

10.10 TWO LENGTHS INVITATION HANDICAP (FINAL)

Winner of Heat 1. Second Round .....

„ „ 2. „ „ .....

„ „ 3. „ „ .....

„ „ 4. „ „ .....

1st 2nd 3rd 4th

Time

100 YARDS CHAMPIONSHIP (THREE LENGTHS)

Holder CHARLES J. LENTON, *Liverpool Swimming Club, won once.*

First Prize, the silver challenge cup; *second prize*, a gold medal; *third prize*, a silver medal. The cup to be won three

years consecutively before becoming the property of any competitor, but in the event of any holder being defeated after having won the competition one year, he shall be entitled to a gold medal of the value of 3*l.* 10*s.*, or losing after winning two years consecutively, a gold medal value 7*l.*

The stations were drawn by lot, No. 1 and 6 to start from right-hand side of the starter, others in order. First and second in each heat to swim in the final.

Heat 1

1. E. A. Newton, King's College, Cambridge S.C.
2. R. A. Crawshaw, Manchester Mayfield S.C.
3. W. Evans, half-mile champion, &c., Manchester Swan S.C.
4. T. Cairns, Liverpool Everton S.C.

Heat 2

5. C. J. Lenton (holder) Liverpool S.C.
6. J. Formby, Liverpool Everton S.C.
7. W. Henry, London (long-distance champion) Zephyr S.C.
8. W. B. Knowles, Liverpool Diamond T.S.C.

In case there are *three* or more non-starters the two heats will be taken in one. A certificate can be had by each competitor who completes this distance under 72 seconds.

Special programmes should always be prepared for the press, the matter being only printed on one side, or else the programme interleaved.

If the gala be taking place in a bath, the secretary should be present some time before the meeting, so as to make all arrangements necessary for the comfort of the spectators and competitors. At the starting end on both sides for about ten yards down the bath a canvas screen, about three feet high, should be erected, so as to prevent visitors being drenched with water when the competitors dive. If possible, this canvas screen should be extended the whole length of the bath on either side. The seats should be arranged, and the reserved portion properly marked off. Poles and cords for hurdle races, tubs for the tub races, and polo whistles, bell, ball, flags, and goal-posts, should be in readiness. Plates for plate

diving, measure, and tape for plunging, &c., should also be thought of if such events are included in the programme. Rosettes for the stewards and officials are necessary, and in order to save the necessity of hunting around for pins, each rosette should be fitted at the back with an ordinary trouser button, so that it may be easily fastened in the button-hole of a coat. Each steward should be allotted his place, and given general instructions as to the conduct of the meeting. The starting end should be kept absolutely clear for the officials, and, if there be a water-polo match, one side of the bath for the referee. Accommodation for reporters should not be overlooked.

A scoring-board is essential, as nothing is more uninteresting to spectators than a series of races among men absolutely unknown to them, and whose personality is not even recognisable except by continued shouting for the name of the winner. If the scoring-board be limited in size, the name of the race, number of heat, and number of non-starters need only be hoisted for the start, the first three and the time being put up on the board after the judge has notified to the telegraphist his decision. It requires a smart steward for this work, and one not likely to get flurried when the starting of one heat follows closely upon the finish of another. A telephone from the dressing-room to the starting-board would be useful. The clerk of the course, or whip, must also be a smart and experienced official, because upon his energy depends the success of the meeting. It is important that he should get the men ready to start sharp to time, and notify to the starter and telegraphist before the conclusion of the previous heat the numbers of the non-starters for the next heat.

If there be a plunging contest, the whip should request the starters in it not to disturb the water unnecessarily, so as to affect the plunging of those starting after them.

For open-water galas the general duties of officials are the same, but the arrangements have to be made in accordance with the suitabilities of the venue. If right out in the open,

two clean hulks or steamers should be moored, one at each end of the course, and the sides formed by lashing together poles or baulks of timber. All boats should be moored outside the course, and a police boat, if obtainable, stationed on either side. For starting purposes a pontoon should be moored along the side of one of the steamers. Boats, with flags marked 'for competitors,' should be kept constantly plying to and from the starting hulk to the shore, and competitors should receive tickets giving all necessary information, including the probable time that the races for which they are entered will be started. For a water-polo match in the open the posts as recommended in the chapter dealing with that game should be provided and tested before the day. As far as possible the course should be made scrupulously fair for all competitors, no matter which station at starting falls to their lot. In a narrow river or canal the course can be measured out, and a staging placed right across at either end, but care should be taken that, if spectators are admitted to these stages, they are secure, as otherwise serious accidents may possibly happen. Sometimes it is impossible, through lack of funds, to buoy out a course, and then the turning spots are marked by flags, but this system of racing is very often unsatisfactory, and wherever practicable the course should be plainly marked. For the benefit of the spectators and to assist the judges, every competitor in open-water races should be compelled to wear a cap and university costume.

The events which can be included in the programme of a meeting are so varied in character that little advice can be given on the subject. Scientific swimming should, however, find a place in every bath gala, but in open water this branch of the art should be limited to surface work almost entirely, otherwise the spectators will not be able to see half the performance. A plunging competition is so intolerably slow that we cannot conscientiously recommend it as a suitable contest at a public gala. Until recently it nearly always found a place, but the advent of water-polo has ousted it from

its position, and a match is a *sine quâ non* at every important meeting. Two good clubs should be invited to play, and if necessary a prize allotted to them. The system of advertising a scratch competition open to all who enter for the open races is bad, as usually only a wretched game results. A polo tournament between five or six selected clubs for a set of prizes is a great draw at an open all-day meeting, but the matches take up too much time if they all have to be decided at an evening gala.

The ordinary races have to be regulated according to the size of the bath. Most of those held in inland towns are over short distances, a long-distance race being the exception, while round the coast, with but slight variation, all the races are over long distances. We should like to see long-distance racing encouraged, not only in the open but in baths, but we frankly admit that financially the short-distance events are by far the more successful. For a short race you may possibly secure over a hundred entries, while for a long race a score would be considered wonderfully good. In open water, the hundred yards, two hundred and twenty yards, and five hundred yards are the best racing distances ; but for baths any race much over a hundred yards in length would not be well supported. The majority of bath handicaps are decided over sixty yards, eighty yards, and one hundred yards, or fractional distances between fifty yards and one hundred and twenty yards. In addition to the open handicaps, which, by the way, should include a short-distance race for ladies, various races for members should be provided. If possible, the distances of these should not be the same as those in the open events. If a championship is to be decided, the conditions should be implicitly complied with, and every competitor made fully to understand them before he starts. Nothing is more prejudicial to a club's interest than to have any unpleasantness arise over an important event such as this.

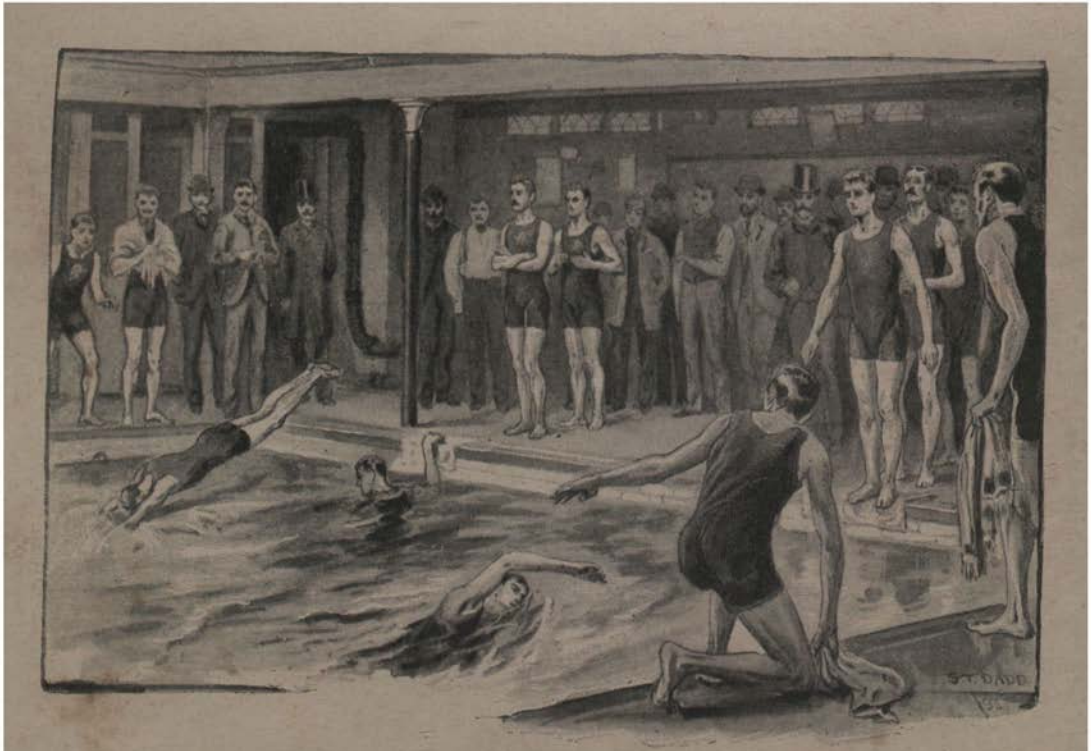
A selection for other events can easily be made. Boys' races over short distances, back-swimming races, team races,

diving competitions, displays of fancy diving, crocodile, hurdle, obstacle, umbrella, Siamese, breast-stroke, and sealed handicap races, are all very popular. Team races, or, as they are sometimes termed, flying squadron races, are an adaptation of the old Royal Mail races. The teams usually consist of seven members, and take their stand on the end of the bath. If the distance be, say two lengths, one man from either team plunges at the word 'go,' and swims the two lengths, then touches the feet of the next man on his side, who at once plunges. This goes on until the last man on either side has started, and the team whose last man gets home first is declared the winner. If both sides be equally matched, these races prove most exciting, as well as capital tests of the relative strength of rival clubs. In the Royal Mail race each swimmer has to carry a mail-bag, and when finished hand it to the next man on his side, who must put it on before he plunges.

A short exhibition of rescue and resuscitation drill will prove of extreme interest, and for ordinary galas it is only necessary to demonstrate the rescue drill in the water and resuscitation. Full details as to the methods of conducting rescue competitions will be found in the chapter on Life-saving.

The crocodile race is also a contest between teams, and is usually decided across a bath, so that as many turns as possible have to be made. As a rule four men take part. They stand in the water in Indian file, each, except of course the front man, placing his hands on the hips of the swimmer in front. At the word 'go,' they start swimming and are required to turn, as well as complete the stipulated distance, without leaving go their hold.

Hurdle and obstacle racing is capital fun. In baths, the hurdles are ordinary poles placed across at intervals and lashed to the sides. The swimmers must learn to take them as it were in their stride, and many a fast man is hopelessly out of it when it comes to hurdle racing. A hurdle race can be varied in many ways. Sometimes the competitors have to take small barrels over one hurdle and under the next, or else



TEAM RACE.

each keep a top hat on and carry an umbrella whilst in the water.

Obstacle races in baths cannot be made such a success as in the open, but some fun can be extracted from a contest in which the competitor has to wear a top hat, go over a hurdle, then under two close together, haul himself out of the water, get over a loose rope, touch the end of the bath, return over the same course, and wind up by getting through a life-buoy before touching the winning post, all the time retaining possession of his hat.

In the open, boats, ordinary hurdles, spring diving-boards and punts are brought into requisition. The ingenuity of committees in this respect is remarkable. Tub-racing is very amusing, the upsets of the competitors causing considerable fun. The Water-Derby is another popular form of entertainment. Each man is mounted on a barrel fitted with the head of a horse and labelled with the name of some well-known racer. Then, each provided with a paddle, the game begins. Racing, tilting, and play with the ball can be indulged in. Water-polo is often played in this manner, or in canoes, more as a bit of amusement for the spectators, owing to the inability of the players to retain their seats, than as a serious game. Duck hunts are now a misnomer. At one time a live duck was used, the swimmer first catching it taking the prize, but threatened prosecutions put a stop to this. A laughable incident occurred at a London gala a few seasons back. A 'duck' hunt was advertised, the duck of course being a swimmer, but this was unknown to that most laudable organisation, the Society for the Prevention of Cruelty to Animals, who sent an officer in uniform to put a stop to the exhibition. Boxing and wrestling in the water are also common competitions, mounted wrestling, one swimmer walking on the bottom and bearing the wrestler on his shoulders, being an especial favourite.

Diving displays, if admitted into the programme, should be of good character. If a team of four experts can be secured, an interesting exhibition can be given. This may include a

gallery dive by three; then from the bottom board—when there is a properly constructed diving-board arranged for different heights—clean-diving, back-diving, all together with hands at side, somersaults, back-diving (changing to front before taking the water) and triple-diving follow. The last-named exhibition is managed by the centre man standing on his hands,—the others taking hold of his feet, and then diving at the word 'go.' Changing over to the top board, usually about fourteen feet from the water, the order is as follows:—Clean-diving, going in together with hands at side, back-diving, back-diving (changing to front before entering water), diving through life-buoys, touching toes in mid-air when diving, and winding up with the cross-dive. All three in this leave the top board together. One goes straight in as in the ordinary dive, the other over the centre man, and the third under him, all taking the water at the same time. The exhibition, when properly carried out, produces a strong impression on the audience.

The programme, as we have said, should be all settled long before the meeting, and when the entries have closed, the order of the events carefully arranged so as to admit of a man entered for more than one race competing in those for which he has entered without being called upon to swim in consecutive heats. Men entered for more than one race should be placed in the earlier heats of the first race, and so on until the order has been made up. The displays should come between the preliminary and second rounds and the second rounds and finals of the races. The preliminary heats of members' races should be decided first, so as to allow time for the arrival of strangers entered for the open events, or if there be big entries for the members' races, the preliminary heats may be swum off some days previously. All these little matters require care and forethought, and if they be exercised there will be no muddled programme, or loss of time during the meeting.

CHAPTER XII

TRAINING

COMMON sense is the primary rule that regulates all training nowadays. The system of wrecking and then rebuilding is dead and gone. Our trainers are more enlightened, and our knowledge of the laws which govern the existence of mankind more extensive.

It is useless to attempt to formulate any special set of rules or recommendations for training. Every swimmer has his constitutional peculiarities to consider, and the diet, as well as exercise, which suits one may be absolutely injurious to another. The main principle of all judicious training is to get into the best possible condition, and to keep in that state as long as possible. It is better not to train at all than to do it by spasmodic spurts, and then lapse back into a careless style of living.

The old styles of training are too well known to need recapitulation. They were never extensively indulged in by the old race of amateur swimmers, to whom, doubtless, the sensible idea that for a race it was absurd to go through a fearful ordeal of almost prison work must often have occurred, while the present generation rarely, if ever, make any pretence of training, beyond indulging in practice swims. Those who are in the front rank generally do prepare themselves for the great events of the year in a more or less desultory fashion, but the susceptibilities of the strict training disciplinarian are often

affected by the habits in which his charge will indulge just before starting in an important race.

So great has been the progress made by the teachers of physical education during the last decade, that boys and girls now usually pass from school well grounded in the principles of elementary exercise. But the temptation to relax physical work when one is healthy in body and mind is one which cannot be easily overcome. There are many successful athletes who boast that they never train, but yet are equal to meeting all the trained men of their time. That time is, however, short, and surely, if but slowly, the day of reckoning comes, and the trained division win from them the pride of place. Neither a swimmer nor any other athlete can afford to play with his constitution. If it be strong, it is certainly advisable to make it stronger, if possible, rather than to weaken it in the slightest degree; whilst if it be weak, sound exercise may result in incalculable advantages in later years.

In this country the majority of swimming races are held in the evening, and in covered baths. The swimmers—who, as a rule, are engaged in business all day—eat a hearty meal just before going to the bath, and swim in their particular race, or play water-polo, perhaps within half an hour after satisfying their appetites. The digestive organs are thereby considerably affected, and if the system be maintained for years, as it very often is, the general vitality of the body is impaired, and the seeds of chronic alimental disturbance sown. It cannot be too strongly impressed upon swimmers as a body that the eating of meals prior to racing is absolutely injurious from a physical point of view, as well as a deterrent to success. One of the greatest evils that a swimmer has to contend with is that of cramp, and this is often brought on through a deranged or full stomach. It is, therefore, of the highest importance that strict attention should be paid to diet, that the meals should be eaten regularly, and not too soon before practice or racing.

Again, many a swimmer takes part in races and water-polo when he is physically unfit for such exercise, for racing requires

plenty of stamina apart from pluck; and although the plucky men without stamina very often shine, their glory is but short-lived, and the after-effects are dire. Some swimmers seem able, and with advantage to their health, to stand the strain of racing night after night, whilst others are wrecks by the end of a season. The rage for pot-hunting is apparently unconquerable, and whilst it is fostered no improvement in this respect can be expected. Every swimmer before he enters upon a racing career should consult a medical man as to his probable powers of endurance, but the average young man of the period laughs to scorn such advice, and rarely, if ever, can be induced to look to the future. The true aim of amateur sport is the promotion of healthy exercise for sport's sake, but in practice it too often becomes a mad and unhealthy race for trophies. Can any amount of prizes, honours, and rewards compensate a swimmer for the loss of that inestimable blessing—good health? Such an ambition is an outrage on our common sense as sportsmen, and every enthusiastic votary of the art should never weary of impressing upon the rising generation of swimmers the need there is for self-restraint in the pursuance of a noble pastime which, if properly indulged in, may make them healthier, brighter, and better men.

If a swimmer desires to succeed in his art, regular and healthy habits must be the rule and not the exception. Continued indulgence in late hours, smoking, and the use of stimulants, only accelerate the development of any weak points in the constitution, and the opposite effect may be anticipated with almost a certainty if such indulgences be avoided. We do not in any way intend to infer by this that a swimmer should make the best part of his life one monotonous round of practice, without change or enjoyment of any kind. Some of our best swimmers are, for instance, inveterate smokers, but such a practice, as any person will readily admit, is not one calculated to improve the staying powers in any marked degree. The general tone of the body has to be kept up, and to aid this change of scene and rational enjoyment are beneficial, but the enjoyment must not

be allowed to more than counterbalance the good effects produced from previous exercise.

The training of the majority of swimmers consists simply of a few ordinary practice swims before a race, but here and there are to be found those who religiously train through the season, and generally with marked improvement to their capabilities. The difficulty is to define where training should begin and where it should cease, and this has to be left entirely to the discretion of the individual immediately concerned ; but a few general hints for improving speed and stamina will be useful.

A vital requirement for a would-be fast swimmer is staying power. That has to be developed before any first-class swimming can be done. By first-class swimming we do not mean the dashing over a short distance in a given time, but a long-continued effort, such as a swimmer would have to make to save his own life or that of another. Once staying power has been developed speed will assuredly follow, and by judicious training a man may make himself a good all-round swimmer over distances ranging from one hundred yards to a mile, and even more. The habits must, as we have said, first of all be regular and healthy, and the living plain though good. There is no advantage to be gained by studying any lists of digestible and indigestible foods. Every man should suit his own tastes, but if possible eschew spiced viands and rich comestibles. If the digestion is not very good, there are plenty of simple remedies which, if taken in time, are of far more use than all the quack medicines ever invented, and more likely to be efficacious. Drugs should be avoided like poison, unless prescribed by a medical man. The great thing in all training is to prevent derangement of the stomach, and to correct it as soon as it makes its appearance.

Long-distance walking and cross-country running are two of the best forms of exercise for a swimmer, as the muscles are thereby hardened and staying power developed. If the swimmer be engaged in business, the journey to and fro—if the hours be

not too long—should be made on foot, the man in training of course rising early enough to allow of his having breakfast a decent time before starting. At every available opportunity a distance walk into the country should be taken, and for the better enjoyment of this some attention should be given to the details of dress, foot covering, &c. A suit of flannels, jacket, cap, and a well-made pair of walking boots will be found sufficient outfit. Great care should be taken that the boots are well fitting, and are adapted for the work. They should be made to order, and for this purpose it is better to employ a maker of racing shoes than an ordinary bootmaker. See that they are not too tight or too loose, that the soles are stout, the toes built squarely, and the uppers not too heavy. Woollen socks should be worn, and if the feet be liable to blister the socks should be soaped inside before starting. Cross-country runs can be obtained almost anywhere. A stout, unspiked running shoe with an ankle-strap, and University running costume, with a sweater over the jersey, is all that is needed. It is wonderful what a recuperative effect an ordinary cross-country run has upon a man jaded by business worries, and to a swimmer it forms a pleasant relief during the off season. Hockey, football, and skating are also advantageous methods of developing the physical powers, but in the swimming season these have to give place to other forms of exercise; dumb-bell practice, Indian clubs, boxing, running, walking, and cycling being the principal changes.

Although a moderate amount of rest is necessary, it is inadvisable, as soon as the swimming season ends, at once to cease active work and lie, as it were, dormant until the advent of spring brings back thoughts of the swimming-bath, the river, or the sea. Exercise in one form or another should be taken, and then a fortnight or so before the opening of the season dumb-bells, Indian clubs, walking, and gymnastics taken up more vigorously than before. By this method the swimmer will be getting himself into good condition long before many of his future opponents will have even thought of training, and

in the first two or three months he will reap the benefit. The exercises must be varied, so that the monotony of the work does not become galling. During the racing season the exercises already indicated should be systematically undertaken and not at once dropped, because they are of invaluable assistance to a swimmer in training.

Every man who participates actively in sport should do so with the idea of developing his bodily powers; and with the ample opportunities now provided the athlete of the present day need never be at a loss to obtain properly directed exercise. If a man be possessed of a vigorous body and pay daily attention to it, he will in later years find that he is in possession of a veritable mine of wealth. The following trenchant remarks on this subject appeared in one of the annual reports of Harvard College:

> If sound health were one of the requisitions for the enjoyment of scholarships, parents who expected to need aid in educating their boys would have their attention directed in an effective way to the wise regimen of health, while young men who had their own education to get would see that it was only prudent for them to secure a wholesome diet, plenty of fresh air, and regular exercise. To attain success and length of service in any of the learned professions, a vigorous body is well-nigh essential. A busy lawyer, editor, minister, physician, or teacher has need of greater physical endurance than a farmer, trader, manufacturer, or mechanic. All professional biography teaches that to win lasting distinction in sedentary indoor occupations, which task the brain and the nervous system, extraordinary toughness of body must accompany extraordinary mental powers.

Innumerable proofs of this statement might be quoted, and although some abnormal examples of vigorous mental powers being co-existent with diseased and enfeebled bodies can easily be named, the undoubted fact that a vigorous physical body is a great advantage to a vigorous mind cannot be gainsaid. This, then, should be the aim of all training, the aim of all true sport. The man who has properly trained for swimming races will finish his career enriched in vigour, his whole body

will be developed, and not merely two or three particular sets of muscles ; and although he may not be able to undergo the severe ordeal of racing with any chance of success against younger men, he will enjoy life more, and take pleasure in his pastime until old age creeps upon him.

The only general rules of training that are applicable to all are these : participation in those forms of exercise calculated to improve the physical powers ; plenty of fresh air ; avoidance of overwork and exceptionally late hours, of excess in diet, and the use of tobacco and stimulants.

The amount of practice that a swimmer should take in the water must be regulated by his habits and social position. If engaged during the day, the only time for practice is in the morning or evening ; and as bath racing usually takes place late in the day, we incline to the opinion that the principal work should be done at that time. Some men can stand early morning swims as well, but many get stale if they practise both morning and evening.

When beginning to practise in the water, the first week or two should be devoted to long, steady swims, with an occasional burst, so that the powers of endurance may be advanced while the speed already gained is not lost. Practice may be taken every day by some swimmers, but with others this will prove too often. Here, again, the frequency of the swims must be left to the discretion of the individual. If he find that he is getting 'stale,' the number of water practices should be lessened, and some other form of exercise substituted. Too great stress cannot be placed on the need there is for a swimmer at the outset of the season to take long steady swims. One or two prominent racing clubs insist upon all their members doing this, and it is astonishing what improvement has been manifested after such trials of endurance have been carried on for a few days.

In the early stages of training it is of importance for a man to be properly looked after, not allowed to stand or play about in the bath without doing a fair amount of swimming,

and after undressing and again before dressing properly groomed and towelled. Grooming is in itself a fine art. An ordinary rough towel may be used first of all to dry the body, but the best second towel is the hand of an astute trainer. A good rub down both with towel and hand puts new life into a swimmer. His muscles become ready for action, the friction increases the circulation near the skin, and invigorates the system. In the absence of a skilled trainer, the rubbing should be done with a rough towel—the rougher the better. All the muscles of the legs, the arms, back, and chest should receive attention, until the body glows all over. A practised swimmer never misses his rub down before a plunge; the experience is too pleasant to be forgotten, and the after effects too invigorating for it to be neglected. A cold bath in the morning, or even a sponge down, with a good towelling after, is a capital incentive to work, and one which persons other than swimmers might adopt to their own advantage.

Whilst in training or, indeed, if a man be often in the water, the hair should be kept short. With long hair there is a greater liability to catch cold, as the drying process is not so quickly and effectually performed; and in addition long hair is a nuisance when one has to dress rapidly, as between the heats of a race, or to be in time to witness another contest taking place at the same meeting. If the swimmer is not accustomed to wear a costume, he should occasionally practise in the one he would wear in a race, so that if the arm action be interfered with, or the under part of the arm likely to get chafed in a long swim, the dress may be altered before the day of the race. A skin-tight costume should be used, with bathing-drawers underneath of silk. All binding, both of costume and drawers, should be of some soft material. It is a mistake to have ornamental braid or anything of that nature, as the swimmer who does not take this hint will find out to his inconvenience—at any rate, if he practises much.

It is exceptionally difficult to wean an athlete from his pipe when once he has become addicted to its use; but the swimmer

should steadfastly set his face against smoking whilst in training. If the temptation be too great to be resisted altogether, the habit must be gradually overcome; but if the pipe be thrown aside for two or three days, the craving for it will soon cease. Smoking tends to shorten the wind, and this in itself ought to be sufficient incentive to an athlete to manfully resist the desire for indulgence and give up the habit whilst in training. Smoking in moderation may not do much harm, if moderation be really observed.

The swimmer, immediately after rising, should have some dumb-bell or club practice, and then, after slight refreshment, stroll gently to the bath or bathing place, if it be handy; if not, a sponge or cold bath and a good rub down should precede the dumb-bell exercise. The swim in the morning should not be long—say a couple of hundred yards; the body must be dried quickly, and well towelled. A sharp walk home and a good breakfast will set the swimmer up for the day. As much walking or running practice as can be obtained, if not taken too soon after meals, a good dinner, and a light tea, with a gentle stroll to the bath, should make the swimmer fairly fit for a good evening's work. A two or three hundred yards' spin for endurance, then a rest, during which the body is well rubbed all over, and a fifty yards' sprint for speed after, may complete the water practice until improvement is noticeable, the test being the watch, the most trustworthy critic of all. The man in training should enlist the services of a really competent friend, and get him to watch for faults in style. If there be any, the swimmer must then proceed slowly until they are eradicated, or else, after persisting in them for a period, he will find it far more difficult to alter his style than to increase his speed to a certain limit. Many young swimmers get out of patience if continually checked, but they should remember that the advice tendered to them is the result of years of experience and careful training, and is, therefore, probably more correct than their own newly-fledged ideas.

At this early stage of training, the methods of racing in

baths and open water should be carefully studied. In a race the swimmer should go as straight as a die for the winning-post, and in all practice an effort should be made to cultivate quick and rapid judgment of distance, so as to be able to get sight-lines to steer by. In a bath the sight-line is the side of the water space, or, if that be irregular, the dressing-boxes. With a little care at the start, the swimmer will soon be able to steer a straight course. It is important that a man should be able to do this, because if he wander all over the bath during the progress of a race he not only jeopardises his own chance, but that of the other competitors whose path he traverses. In open water the steering is a far more difficult matter than in a bath, and many good swimmers, quite capable of annihilating their opponents in a bath race, have in open water been hopelessly left in the rear, or far out of the course, through their lack of judgment and inability to steer properly. The best method, before starting for a swim in open water, is to look up the side of the course on which the face will be glancing during the swim, and pick out some prominent object as a guide, such as a tower, a tree, or the mast of a ship. If a return journey to the starting-point has to be made, a guide should also be selected on the opposite side before plunging in. Various considerations as to the set of the tide or stream have also to be studied, and it is therefore expedient to cultivate a practical acquaintance with the course. In the open sea it is often best to go apparently right out of the course, so as to avoid the action, or gain the advantage of, a particular current; and before swimming it is a good plan to watch the relative speed-rates of half-a-dozen corks thrown in from various points on the starting-board.

In bath swimming the ability to turn well is of exceptional advantage, particularly in a short race; and very often the mere possession of this ability is sufficient to allow a swimmer to beat another who, in a straight-away race, would have the best of it by a yard or two. Not only must the turn be made smartly, but the 'push off' must be vigorous. The best

method of practising turning is to swim across the bath slowly and so judge the stroke, then, when close to the side, the under arm can be pushed outward instead of downward. The other arm should be at the same time swung forward, and the knees drawn up. The body will then turn completely round, the over arm touching the side as the turn is made. Then both feet should be placed against the side, the hands shot rapidly forward, and a vigorous 'push off' taken. These movements should be performed so quickly that there is no halt between them, and with a little practice the turn may be performed neatly and mechanically. An inhalation should be taken when the under arm is being pulled outward, as the head sinks below the water during the turn. There are other ways of turning, but this method will be found the best for racing purposes. When the bath is tiled the feet very often slip unless a careful turn be made, and the impetus which would otherwise be gained from the 'push off' is lost. Practice in 'pushing off' can be obtained in the following manner: Place the feet against the side, putting both hands behind, so that the rail may be clutched, and then crouch up the body. The head will then be face downward, close to the water, the hands holding the rail, and the body drawn into the side, with the soles of the feet touching the wall. When ready, the head should be sunk, the arms brought rapidly to the front until they are in advance of the head, as in plunging, and then a tremendous push forward be made. There are many swimmers who can 'push off' a considerable distance. Fifty feet has very often been traversed in this manner, the swimmer sculling till his feet are in position, and then straightening his body immediately by a great muscular effort. When turning in open water care should be exercised, especially when the race is taking place in the sea. Piers and the sides of old hulks are often used in competitions as turning-points, and these are generally covered with barnacles, which cut the feet in terrible fashion.

A swimmer, having passed through the elementary work of

developing his staying power, perfecting his style of swimming, as well as learning to turn and 'push off' well and neatly, so as not to encroach upon the water-space allotted to another competitor, should then devote his attention to speed. Improvement in speed can only come by constant practice, and it is senseless to throw up training because within a certain period no marked decrease in the time taken to cover a particular distance is noticeable. In fact, the trials may occasionally be much slower than those previously made, but this should not in any way discourage the novice, as there are many causes, such as a man being slightly out of condition, making a bad start or a turn, which might contribute to this.

The training for speed by amateurs should not be overdone. If the swimmer does his work in the evening, he should take care not to tire himself during the day. Gentle walks after the tub, rub down, dumb-bells in the morning, with an occasional run of a hundred yards later in the day, will keep him fit. His first spins should be about thirty yards at top speed, a rub down, and then another sprint of fifty yards. This is quite sufficient water practice, and after a careful towelling a brisk walk should be taken. This training will perfectly suit a man entered for a hundred yards race. Occasionally the full distance should be swum against the watch, and now and then two hundred yards covered at an ordinary pace ; but the main work should be confined to distances somewhat shorter than that for which the swimmer is training. When entered for races at distances of above one hundred and under five hundred yards, the training has to be slightly altered. Longer swims are necessary on account of the need for greater staying power. About three-quarters of the distance should be covered at racing pace. For courses over five hundred yards the work is much more severe. The speed should not be too great at first, but it must be gradually increased until considerably more than half the distance can be covered rapidly. Once or twice a week a swim of double the journey entered for should be made at a uniform rate of movement, and once a week the

full distance traversed at top speed against the watch. Even when training for the longer races the short fifty-yards swims should not be neglected, for the possession of a turn of speed at the finish of a close long-distance race is often very valuable.

For a championship race the swimmer should try and secure a special week of training. An early morning dip, breakfast, a walk, and then a swim, followed by dinner, a sleep, a special speed swim, tea, walk, and early bed should be the programme of each day's work just prior to the race. A short speed swim on the morning of the race will be of assistance. If the venue is some distance away, the journey should be made overnight and not on the day of the race, as nothing upsets a man more than being hurried at the last moment.

In addition, it is advisable to view the course, get full information as to the starting-, turning-, and finishing-points, as well as obtain refreshment. This it is very often impossible to do when the journey is a considerable one or the trains late. All these little details have to be remembered, but a practised swimmer soon gains a knowledge of them by experience, and is never at a loss how to act.

CHAPTER XIII

PUBLIC BATHS

THE first public baths in this country were erected by the Corporation of Liverpool, and were opened in 1828. They are situated at the St. George's Pier Head, and are still much used by swimmers, as they are supplied with salt water.

In September 1844, the Lord Mayor of London, Sir W. Magnay, convened a meeting at the Mansion House, with the idea of forming a committee for 'Promoting the Establishment of Baths and Wash-houses for the Labouring Classes.' The Rev. Sir Henry Dukenfield, Bart., was appointed chairman of the committee, and through his instrumentality a Bill was brought into the House of Commons by Sir George Grey, and received the Royal assent on August 26, 1846.

The first of the London parishes to adopt the Act of 1846 was that of St. Martin's in the Fields, and baths were opened in Green Street, Leicester Square, in January 1849. This was followed by the opening of baths in Lisson Grove during the same year, and at Great Smith Street, Westminster, and Greenwich, in 1851.

In 1852 there were seven establishments, which were estimated to have been used by 800,000 bathers. The Act was largely taken advantage of, and public baths were inaugurated in Marylebone, Westminster, Poplar, Bloomsbury, Hanover Square, Bermondsey, and other parishes. A joint-stock company took over the old National Baths in West-

minster Bridge Road in the following year, and converted them into Baths and Wash-houses. These baths are stated to have been the largest and finest in existence at that period.

The success attending upon the erection of public baths in London and Liverpool led to the adoption of the system throughout the country. Among the first erected were those at Manchester, Birmingham, Bristol, Maidstone, Bilston, Norwich, Hull, Oxford, Wolverhampton, Macclesfield, Nottingham, Bolton, Worcester, York, Hereford, Chester, Plymouth, Sunderland, Newcastle, Carlisle, Coventry, Belfast, and Waterford. In the majority of instances they were found to be self-supporting, and in most cases to yield a profit. The advantages of the Act are now fully recognised, and public baths are springing up in almost every town and parish. The Act provides for swimming baths (covered and open air), warm or cold slipper baths, vapour and shower baths, and wash-houses. Hot air or Turkish baths are not mentioned, but the Local Government Board raises no objection to them. There may be three classes of swimming baths, but two classes are generally found sufficient. The inclusion, however, of a third-class bath in a large establishment, for the use of boys and schools, would be a great advantage, especially as it is not unlikely that the Education Department may be induced to grant further facilities for the teaching of swimming, so that every school can regularly make use of baths during the summer months. In addition a swimming bath for women is most essential.

Bath commissioners are nearly always attracted by cheap sites, and build the establishments they are called upon to control in some out-of-the-way quarter of the town, down some by-street, where a site, generally a large one, can be purchased at no very great outlay. This is undoubtedly a mistake, as all public buildings of this character should at least have their principal entrance, not necessarily an extensive frontage, abutting on a main thoroughfare; for it has been found that the public do not make so much use of establishments in an

out-of-the-way position as of those placed prominently before them. In the end the extra cost of the site is more than repaid.

In dealing with the swimming baths and their relative sizes there are many points to be considered. In a locality with a mixed population, where a large establishment can be maintained, the following dimensions for the water surface will be found to be the best:

First-Class Bath	.	.	100	feet	by	40	feet
Second „ „	.	.	120	„		40	„
Women's „	.	.	60	„		40	„

If there is a third-class bath for boys, it should be about the size of the women's bath.

The popularity of swimming, mainly owing to the energy of swimming clubs, has made the baths a remunerative feature of the public bath-houses. The first-class bath should not be less than 100 feet long, and should have a width of at least 40 feet. If a greater length is required it should be remembered that the bath will be most probably used for racing, and a length that will give a certain number of laps to a recognised distance is essential.

A good width is also required, so that several can start in a race at the same time. Water-polo, which has done much to popularise swimming, requires a good width for the field of play, and also a good depth of water. The depth usually varies; one end should be 7 ft., and the other 3 ft. 6 in. in depth. The bath should be lined with white glazed bricks, and have a handrail all round, with a spray at one end and a scum-trough at the other, to take the dust, &c., off the surface of the water.

The hall in which the swimming bath is placed is constructed so much wider to allow of a gangway and dressing-boxes, which are usually arranged along the two sides of the bath. The boxes may be 3 ft. 9 in. by 3 ft. 9 in., and the gangway in front 4 ft. 6 in. to 5 ft. in width. There should be

a 6-ft. gangway at the shallow end of the bath, where the entrance is best made.

The diving stages and spring-boards are placed at the deep end, where there should be a gangway of 10 ft.

A good gallery, usually continued round the sides of the bath, must be provided to accommodate a large number of spectators. This should be arranged so that all can see the surface of the water.

A warm and cold shower should be provided; at the deep end for preference.

The sanitary conveniences should not be placed in direct connection with the bath-houses, but should have a ventilated lobby between; if this is not done, the tendency is, whatever precautions are taken, for them to ventilate themselves into the bath-house.

The bath-house should be well lighted from the roof by a ridge skylight running the whole length of the building, and there should be clerestory windows on either side if obtainable.

The height of the roof should be carefully considered, and it may be constructed either of wood or iron, or both combined.

Great care should be taken in the proper ventilation of the bath-house.

If the bath-house is to be used as a public hall during a portion of the year, the dressing boxes should be made so that they are removable, a movable floor will have to be provided to cover the bath, and provision must be made for storage when not in use.

Extra exit must also be provided, and stone staircases arranged from the gallery.

No gallery is required in the second-class bath, and the dimensions of the gangway and boxes, as well as the height of the roof, can be less than in the first-class bath. Although not usual, the second-class bath should in most instances be larger than the first, but as it will be little used for racing, &c., the length and width are not of so much importance as the providing of the largest amount of accommodation possible.

A shower and 'soap-hole' must be provided for the use of labourers coming from dirty work, before entering the swimming bath.

In the women's bath the accommodation should be somewhat similar to the first-class men's, with a gallery. The length of the bath should not be less than 60 ft., and it should be of a good width, so that water-polo can be played in it.

The subject of heating and maintaining the heat of the water in swimming baths is most important, and in almost every establishment there is an unnecessary waste of water and fuel. As water is a most expensive item, costing from fourpence to one shilling per 1,000 gallons by metre, the limitation of the necessity for frequently changing and reheating the first supply is of the utmost importance. A simple but noisy system is to inject jets of live steam directly into the swimming bath by means of a finely perforated pipe inserted usually at the bottom of the deep end, the two ends of the pipe returning round and running a few feet along the sides towards the shallow end. The steam is communicated by a pipe running down the side in the middle of the deep end, which has to be protected to prevent bathers being scalded.

A much more elaborate and expensive system, which provides for sending the water into the bath at the required temperature, has been used in one or two large establishments. This is done by passing the water from the main through a heater, which is connected with a patent boiler, and admitting the water at the bottom of the deep end of the bath.

Another system is that for which it is claimed that the whole of the heat generated is used, a uniform temperature ensured, and the waste of water prevented. The water can be discharged direct into the bath at its normal temperature, then circulated and warmed, or it can be warmed before it is sent into the bath. When the water is once in the bath, it can be constantly circulated, warmed, aërated, and purified. It is withdrawn from the top and forcibly returned through patent spreaders placed at equal distances apart over the floor of the

bath. By this method the water is heated uniformly, thereby doing away with the cold patches of water which are so frequently to be found in baths heated by some of the other systems. The cost of heating is also reduced to a minimum, as cold water need not be introduced into the bath so frequently.

No matter what system of heating is adopted, all the pipes, both for hot and cold water, should be placed in a subway, or in such a position as to be easily attended to if repairs are necessary.

APPENDIX

THE AMATEUR CHAMPIONSHIPS

THE amateur championships of England are open to all amateur swimmers, no matter of what nationality, and no restriction as to length of residence is imposed upon competitors. In every instance where more than two competed the names of the first three men are given, the name of the actual winner being printed in italics.

THE MILE CHAMPIONSHIP

This has always been considered the premier race of the year, as it is the best test of speed and stamina combined.

The race was originally promoted by the Metropolitan Swimming Association. It has been swum in open still water since 1873.

Year	Date	Result	Club	Time	Course
				m. s.	
1869	Aug. 21	*T. Morris*	National	27 18	Putney to Hammersmith
		H. Parker	Alliance		
		J. Wilson	Liverpool		
1870	Aug. 27	*H. Parker*	Alliance	26 $6\frac{2}{5}$	,,
		W. H. Bell	East London		
		W. Crinian	National		
1871	July 22	*H. Parker*	Alliance	24 35	,,
		F. Wilson	Leeds		
		G. Cole	North London		
1872	Aug. 21	*H. Parker*	Alliance	29 3	,,
		G. Cole	North London		
		D. Ainsworth	Alliance		
1873	Aug. 25	*D. Ainsworth*	Alliance	30 $58\frac{3}{5}$	Welsh Harp, Hendon
		H. Davenport	Ilex		
		W. H. Cottam	Lancaster		
1874	Aug. 24	*H. Davenport*	Ilex	31 9	,,
		D. Ainsworth	Serpentine		
		A. S. Robinson	Leeds		
1875	Aug. 24	*H. Davenport*	Ilex	31 30	Crystal Palace
		D. Ainsworth	Serpentine		
		W. H. Cottam	Lancaster		

MILE CHAMPIONSHIP—*Continued*

Year	Date	Result	Club	Time	Course
				m. s.	
		H. Davenport .	Ilex	33 8	Welsh Harp,
1876	Sept. 9	A. S. Robinson .	Leeds		Hendon
		C. L. O'Malley .	Ilex		
		H. Davenport .	Ilex	29 25½	,,
1877	Aug. 11	J. Whittle . .	North London		
		J. P. Taylor . .	Newcastle		
		H. Davenport .	Ilex	31 15¼	Crystal Palace
1878	Aug. 10	G. Fearn . . .	South London		
		E. C. Danels .	North London		
		H. Davenport .	Ilex	34 9	Welsh Harp,
1879	Aug. 9	R. Todd . . .	Newcastle		Hendon
		J. P. Taylor . .	Newcastle		
		J. P. Taylor .	Newcastle . .	30 38	Norwood
1880	Aug. 14	A. E. France .	Alliance		Lake
		A. F. Bettinson .	St. John's Wood		
		J. P. Taylor .	Newcastle . .	35 20	Elstree
1881	Aug. 13	G. Dunmore .	Alliance		Reservoir
		W. A. Booth .	Cygnus		
		J. P. Taylor .	Newcastle . .	32 38	Edgbaston
1882	Aug. 19	E. C. Danels .	North London		Reservoir
		T. Hedges . .	Bristol Leander		
		E. C. Danels .	North London .	31 40⅗	Welsh Harp,
1883	Aug. 11	G. Dunmore .	Alliance		Hendon
		W. R. Itter . .	Regent		
		G. Bell . . .	Sandringham .	31 42⅘	Edgbaston
1884	Aug. 16	E. C. Danels .	North London		Reservoir
		S. Sargeant . .	Portsmouth		
		S. Sargeant . .	Portsmouth . .	32 11½	Welsh Harp,
1885	July 18	G. Bell . . .	Sandringham		Hendon
		T. Hedges . .	Bristol Leander		
		H. C. Schlotel .	Surbiton . . .	31 32⅘	,,
1886	July 24	G. Bell . . .	Sandringham		
		T. Hedges . .	Bristol Leander		
		J. Nuttall . .	Stalybridge . .	30 38	SaltfordCanal,
1887	Aug. 6	A. E. France .	Park		Bristol
		T. Ashton . .	Bristol Leander		
		J. F. Standring	Zephyr . . .	34 1½	Welsh Harp,
1888	July 21	A. E. France .	Neptune		Hendon
		F. W. Moses .	Zephyr		
		H. Bowden . .	Polytechnic . .	31 0⅘	,,
1889	July 20	J. F. Standring .	Zephyr		
		A. E. France .	Neptune		
		S. W. Greasley .	Leicester . . .	29 32⅖	Edgbaston
1890	July 19	W. Evans . .	Manchester		Reservoir
		A. Ibbott . . .	Dreadnought		
		S. W. Greasley .	Leicester . . .	30 33⅗	Kidsgrove,
1891	June 27	J. C. Morton .	Sunderland		Staffs.
		S. B. French .	Liverpool Gym.		
1892	Aug. 13	*S. W. Greasley*[1]	Leicester . . .	28 18⅖	Turf near Exminster

[1] Swam over in record time.

HUNDRED YARDS CHAMPIONSHIP

Promoted by the South-east London Club from 1878 till 1889, when the management was taken over by the Amateur Swimming Association. In 1872 three races were held for a championship at this distance, W. Cole, of the North London Club, winning all three. On August 28, 1875, J. Trudgeon, of the Alliance Swimming Club, London, won a 100-yards championship in the Edgbaston Reservoir in 1 min. 16 sec., whilst, the same year as the official championship was instituted, F. E. Odell, Ilex Club, won a 100-yards amateur championship at Lambeth Baths, July 15.

Year	Date	Result	Club	Time	Place
				m. s.	
1878	Oct. 7	*J. S. Moore*	S.-E. London	1 16¾	Victoria Baths, Peckham
		T. Robinson	Dreadnought		
		W. J. Gillett	S.-E. London		
1879	Oct. 6	*J. S. Moore*	S.-E. London	1 13¼	Lambeth Baths
		E. C. Danels	North London		
		T. Robinson	Bor. of Finsbury		
1880	Oct. 4	*W. R. Itter*	Regent	1 16¾	,,
		F. E. Odell	Ilex		
		E. C. Danels	North London		
1881	Sept. 26	*G. Bettinson*	German Gym.	1 16	,,
		J. S. Moore	S.-E. London		
		W. R. Tetley	Liverpool		
1882	Sept. 18	*C. Depau*	Zephyr	1 12¼	,,
		A. E. France	Zephyr		
		J. S. Moore	S.-E. London		
1883	Sept. 17	*W. Blew Jones*	Otter	1 11	,,
		A. F. Bettinson	German Gym.		
		C. Hallam	Nottingham		
1884	Sept. 15	*J. L. Mayger*	Burton-on-Trent	1 11⅕	,,
		T. Cairns	Everton		
		A. Taylor	Abbey		
1885	Sept. 14	*J. L. Mayger*	Burton-on-Trent	1 12	,,
		A. Taylor	Swift C.C.		
		J. F. Finegan	Kirkdale		
1886	Sept. 20	*J. Nuttall*	Stalybridge	1 9½	,,
		J. F. Finegan	Liverpool		
		J. L. Mayger	Burton-on-Trent		
1887	Sept. 26	*J. Nuttall*	Stalybridge	1 7⅕	,,
		W. Knowles	Liverpool		
		J. L. Mayger	Burton-on-Trent		
1888	Sept. 24	*J. Nuttall*	Stalybridge	1 6¼	,,
		J. F. Standring	Zephyr		
		W. Knowles	Liverpool		
1889	Oct. 7	*C. J. Lenton*	Liverpool	1 7⅕	,,
		W. Knowles	Liverpool		
		J. F. Standring	Zephyr		

HUNDRED YARDS CHAMPIONSHIP—*Continued*

Year	Date	Result	Club	Time	Place
				m. s.	
1890	Sept. 20	*W. Evans* . .	Manchester Swan	1 8¾	Bootle Baths
		C. J. Lenton .	Liverpool		
		W. B. Knowles	Liverpool		
1891	Oct. 10	*W. Evans* . .	Manchester Swan	1 8⅘	St. George's Baths, Victoria
		A. W. Burghard	Nautilus		
		R. A. Crawshaw	Mayfield		
1892	Sept. 19	*J. H. Tyers* . .	Man. Osborne .	1 5⅘	Leicester, Vestry St. Baths
		W. Evans . .	Manchester Swan		
		S. Greasley . .	Leicester		

TWO HUNDRED AND TWENTY YARDS CHAMPIONSHIP

Promoted by the Swimming Association of Great Britain in 1880

Year	Date	Result	Club	Time	Place
				m. s.	
1880	Oct. 14	*E. C. Danels* .	North London .	3 9¾	Lambeth Baths
		W. R. Itter . .	Regent		
		G. Dunmore. .	Alliance		
1881	Oct. 10	*E. C. Danels* .	North London .	3 14½	,,
		G. Dunmore .	Alliance		
		F.W. Huntington	Liverpool		
1882	Oct. 2	*E. C. Danels* .	North London .	3 13¼	,,
		C. Depau . .	Zephyr		
		G. Dunmore .	Alliance		
1883	Oct. 1	*T. Cairns* . .	Everton . . .	2 59½	,,
		W. Blew Jones.	Otter		
		W. R. Itter . .	Torpedo		
1884	Sept. 29	*T. Cairns* . .	Everton . . .	3 2¼	,,
		H. R. Shevill .	Amateur		
1885	Sept. 28	*T. Cairns* . .	Everton . . .	3 8¼	,,
		A. E. France .	Park		
		H. R. Shevill .	Amateur		
1886	Oct. 11	*J. Nuttall* . .	Stalybridge . .	3 4⅘	,,
		E. H. Eason .	Portsmouth		
		T. Smith . . .	Eastbourne		
1887	Oct. 10	*J. Nuttall* . .	Stalybridge . .	2 59⅘	,,
		W. Henry . .	Zephyr		
		J. Acton . . .	Manchester Swan		
1888[1]	Oct. 8	*J. Nuttall* . .	Stalybridge . .	3 15⅗	,,
		W. H. Smith .	Pacific		
		J. S. Welch . .	Maidstone		
1889	Sept. 25	*T. Jones* . . .	Manchester Swan	2 57½	New Islington Baths, Manchester
		A. Dickinson .	Oldham Gntmn.'s		
		P. Abbott . .	Stalybridge		

[1] Race afterwards declared void.

TWO HUNDRED AND TWENTY YARDS—*Continued*

Year	Date	Result	Club	Time	Place
				m. s.	
1890	Oct. 6	*W. Evans*	Manchester Swan	2 51⅕	Kensington Baths
		W. Henry	Zephyr		
		T. Jones	Manchester Swan		
1891	Sept. 21	*W. Evans*	Manchester Swan	2 52	Leicester
		S. W. Greasley	Leicester		
		J. Lakin	Leicester		
1892	Sept. 5	*J. H. Tyers*	Manch. Osborne	2 46⅘	Cookridge St. Baths, Leeds
		W. Evans	Manchester Swan		
		R. A. Crawshaw	Mayfield		

SALT WATER CHAMPIONSHIP (440 *yards*)

Promoted in 1884 by the Portsmouth Swimming Club

Year	Date	Result	Club	Time	Place
				m. s.	
1884	Aug. 4	*T. Cairns*	Everton	6 33	Southsea
		S. Sargeant	Portsmouth		
		W. H. Britton	Salford		
1885	Aug. 3	*H. C. Schlotel*	Surbiton	6 48½	,,
		T. Smith	Eastbourne		
		S. Sargeant	Portsmouth		
1886	Aug. 2	*H. C. Schlotel*	Surbiton	6 21¼	,,
		J. Nuttall	Stalybridge		
		T. Smith	Eastbourne		
1887	Aug. 1	*H. C. Schlotel*[1]	Surbiton	6 31⅘	,,
		J. F. Standring	Salford		
		F. W. Moses	Zephyr		
1888	Aug. 6	*J. Nuttall*	Stalybridge	6 16½	Ipswich
		J. F. Standring	Zephyr		
		H. C. Schlotel	Surbiton		
1889	Aug. 17	*W. Henry*	Zephyr	6 4	Southsea[2]
		A. E. France	Neptune		
		H. Bowden	Dolphin		
1890	Aug. 4	*W. Evans*	Manchester Swan	6 19½	,,
		A. Smith	Tyldesley		
		W. Henry	Zephyr		
1891	Aug. 3	*W. Evans*	Manchester Swan	7 15	,,
		W. J. Stratton	Zephyr		
		W. Brickett	Unity		
1892	Aug. 1	*W. Evans*	Manchester Swan	7 3	,,
		G. B. Smart	Sheerness		
		W. J. Stratton	Zephyr		

[1] After a dead heat with Standring.

[2] Course short through stages shifting.

FIVE HUNDRED YARDS CHAMPIONSHIP

Promoted by the North London Club in 1878, and taken over by the Amateur Swimming Association in 1889. On Sept. 20, 1861, E. Donovan won a 500-yards championship at Leaf Street Baths, Manchester.

Year	Date	Result	Club	Time	Place
				m. s.	
1878	Aug. 20	*J. P. Taylor*	Newcastle	8 7¼	Wenlock Baths, London
		W. Avery	West London		
		D. Ainsworth	Serpentine		
1879	Aug. 26	*E. C. Danels*	North London	7 44¼	,,
		J. P. Taylor	Newcastle		
		A. E. France	Alliance		
1880	Aug. 24	*E. C. Danels*	North London	7 51¼	,,
		D. Ainsworth	Serpentine		
		G. Dunmore	Alliance		
1881	Aug. 23	*E. C. Danels*	North London	7 49¾	,,
		G. Dunmore	Alliance		
		D. Ainsworth	Serpentine		
1882	Aug. 28	*E. C. Danels*	North London	7 44	Lambeth Baths
		G. Dunmore	Alliance		
		W. R. Itter	Torpedo		
1883	Aug. 21	*E. C. Danels*	North London	7 48¼	,,
		W. R. Itter	Torpedo		
		W. Henry	Zephyr		
1884	Aug. 25	*T. Cairns*	Everton	7 32½	,,
		H. R. Shevill	Amateur		
		E. C. Danels	North London		
1885	Aug. 24	*T. Cairns*	Everton	7 51¾	,,
		H. C. Schlotel	Surbiton		
		T. Smith	Eastbourne		
1886	Sept. 6	*J. Nuttall*	Stalybridge	7 19¾	,,
		H. C. Schlotel	Ilex and Surbiton		
		T. Cairns	Liverpool Defence		
1887	July 25	*J. Nuttall*	Stalybridge	7 26⅘	,,
		H. Bowden	Dolphin		
		J. S. Welch	Maidstone		
1888	Aug. 27	*J. Nuttall*	Stalybridge	7 25⅕	,,
		H. Bowden	Dolphin		
		W. Brickett	Unity		
1889	Aug. 19	*J. F. Standring*	Zephyr	7 35⅕	Kingsdown Baths, Bristol
		G. A. Mead	Bristol Leander		
		A. E. France	Neptune		
1890	Sept. 6	*W. Evans*	Manchester Swan	7 23⅘	Leamington
		S. W. Greasley	Leicester		
		J. Ward	Coventry		
1891	Aug. 8	*W. Evans*	Manchester Swan	7 14	Whetley Mills, Bradford
		S. W. Greasley	Leicester		
		A. Dickenson	Oldham G'ntmn's.		
1892	Ju'y 16	*W. Evans*	Manchester Swan	7 24	Tunbridge Wells
		G. B. Smart	Sheerness		
		W. J. Stratton	Zephyr		

HALF-MILE CHAMPIONSHIP

Promoted by the 'Sporting Life' newspaper in 1881, afterwards taken over by the A.S.A. Half-mile championship races were held in 1874 and 1879, and were won by A. S. Robinson, of Leeds, and R. Todd, of Newcastle, respectively.

Year	Date	Result	Club	Time	Place
				m. s.	
1881	July 16	*D. Ainsworth*	Serpentine	14 31½	Welsh Harp, Hendon
		G. Dunmore.	Alliance		
		R. Todd	Newcastle		
1882	July 22	*D. Ainsworth*	Serpentine	15 16¾	,,
		G. Dunmore.	Alliance		
		E. C. Danels	North London		
1883	July 14	*D. Ainsworth*	Serpentine	14 23½	,,
		A. E. France	Myddelton		
		W. Henry	Zephyr		
1884	July 12	*G. Bell*	Sandringham	14 35½	,,
		F. W. Moses	Zephyr		
		D. Ainsworth†	Serpentine		
		T. Smith†	Eastbourne		
1885	July 4[1]	*H. C. Schlotel*	Surbiton	13 4½	,,
		D. Ainsworth	Serpentine		
		T. Smith	Eastbourne		
1886	July 10	*H. C. Schlotel*	Surbiton	14 17½	,,
		D. Ainsworth	Serpentine		
		H. R. Shevill	Amateur		
1887	July 9	*J. Nuttall*	Stalybridge	14 44	,,
		H. Bowden	Dolphin		
		H. C. Schlotel	Surbiton		
1888	July 7	*H. Bowden*	Polytechnic	14 25⅖	,,
		J. F. Standring	Zephyr		
		J. Nuttall.	Stalybridge		
1889	July 6	*J. F. Standring*	Zephyr	14 56⅘	,,
		H. Bowden	Polytechnic		
		A. E. France	Neptune		
1890	July 5	*W. Evans*	Manchester Swan	14 38	Hollingworth Lake
		A. Smith	Tyldesley		
		H. C. Schlotel	Surbiton		
1891	July 18	*S. W. Greasley*	Leicester	13 42⅖	Turf near Exeter
		W. Evans	Manchester Swan		
		G. A. Mead	Bristol Leander		
1892	Aug. 20	*S. W. Greasley*	Leicester	14 0⅘	Edgbaston Reservoir, Birmingham
		G. B. Smart	Sheerness		
		A. Jarvis	Leicester		

[1] Course over forty yards short.

LONG-DISTANCE CHAMPIONSHIP

Originally known as the Lords and Commons Race (1877 to 1879), the first cup having been presented by a number of members of Parliament. The conditions stipulate that the course must be between five and six miles direct, below lock in running fresh water or in a tidal river.

Year	Date	Result	Club	Time	Course
				h. m. s.	
1877	July 23	*H. Davenport*	Ilex	1 13 27	Putney to Westminster
		G. Fearn	Putney		
		J. Whittle	North London		
1878	July 29	*H. Davenport*	Ilex	1 16 10	,,
		G. Fearn	Putney		
		E. C. Danels	North London		
1879	July 26	*H. Davenport*	Ilex	1 22 27	Westminster to Putney
		G. Spong	Cygnus		
		H. Simpson	Alliance		
1880	Aug. 7	*W. R. Itter*	Regent	1 17 0	Putney to Charing Cross Rly. Bridge
		W. R. Richardson	Dublin		
		A. F. Bettinson	Unattached		
1881	July 23	*W. R. Richardson*	Dublin	1 21 30	,,
		A. F. Bettinson	German Gym.		
		W. A. Booth	Cygnus		
1882	July 29	*F. W. Huntington*	Liverpool	1 21 0	,,
		W. R. Itter	Torpedo		
		G. Bell	Sandringham		
1883	July 21	*W. R. Itter*	Torpedo	1 15 20	,,
		G. Bell	Sandringham		
		T. Hedges	Bristol		
1884	Aug. 9	*G. Bell*	Unity	1 19 1	,,
		W. R. Itter	Late Torpedo		
		F. W. Moses	Zephyr		
1885	Aug. 8	*G. Bell*	Sandringham	1 24 42	,,
		S. Sargeant	Portsmouth		
		T. Hedges	Bristol		
1886	Aug. 14	*A. E. France*	Park	1 20 50	,,
		G. Bell	Sandringham		
		T. Hedges	Bristol		
1887	Aug. 20	*A. E. France*	Neptune	1 18 10	,,
		W. Henry	Zephyr		
		J. Acton	Manch. Swan		
1888	Aug. 11	*A. E. France*	Neptune	1 17 7	,,
		G. Bell	Sandringham		
		T. Hedges	Bristol Leander		
1889	Aug. 31	*H. Bowden*	Polytechnic	1 25 50	,,
		A. E. France	Neptune		
		F. Bownes	Woolwich		
1890	Aug. 16	*W. Henry*	Zephyr	1 15 15	Kew Railway Bridge to Putney Pier
		A. Ibbott	Dreadnought		
		F. Bownes	Royal Arsenal		

LONG-DISTANCE CHAMPIONSHIP.—*Continued.*

Year	Date	Result	Club	Time	Course
				h. m. s.	
1891	July 25	*A. Ibbott*	Dreadnought	1 12 27	Kew Railway Bridge to Putney Pier
		A. E. France	Neptune		
		J. F. Smart	Dreadnought		
1892	July 23	*M. Drake*	City Lon. Police	1 18 40	,,
		T. Orr	Manch. Swan		
		A. Ibbott	Dreadnought		

PLUNGING CHAMPIONSHIP

Originally promoted by the Swimming Association of Great Britain, 1883.

Year	Date	Result	Club	Distance plunged	Place
				ft. in.	
1883	Oct. 1	*T. H. Clarke*	Torpedo	63 2	Lambeth Baths
		B. Jones	Ilex & Liverpool	61 4	
		J. Graves	Liverpool	59 6½	
1884	Sept. 29	*H. Davenport*	Ilex	64 8	,,
		W. Jenkins	Finsbury Park	63 4	
		B. Jones	Ilex	60 9½	
1885	Sept. 28	*H. Davenport*	Ilex	64 11	,,
		W. Jenkins	Zephyr	62 1	
		T. H. Clarke	Torpedo	62 0	
1886	Oct. 11	*H. Davenport*	Ilex	67 11	,,
		G. A. Blake	Greenwich	66 0	
		W. Jenkins	Zephyr	65 10	
1887	Oct. 10	*G. A. Blake*	Lewisham	73 10½	,,
		T. H. Clarke	Torpedo	59 11	
		W. Henry	Zephyr	59 3	
1888	Oct. 8	*G. A. Blake*	Lewisham	71 3	,,
		W. Jenkins	Zephyr	64 8½	
		W. Henry	Zephyr	59 8½	
1889	Oct. 7	*G. A. Blake*	Lewisham	73 5	,,
		W. Jenkins	Zephyr	59 6	
		W. Henry	Zephyr	57 0	
1890	Sept. 20	*G. A. Blake*	Lewisham	69 3	Bootle Baths
		T. Sandiford	Pendleton	68 6	
		W. Henry	Zephyr	63 6	
1891	July 6	*G. A. Blake*	Croydon Dolphin	67 3	Kent Street Baths, Birmingham
		J. McHugh	Sefton	61 7	
		T. Sandiford	Pendleton	56 3	
1892	Oct. 6	*H. A. Wilson*	Woodside	59 6	Westminster Road Baths, Liverpool
		J. McHugh	Liverpool	58 3	
		C. E. Sandiford	Salford	58 0	

RECORDS

The Amateur Swimming Association has only recently appointed a records committee, and until the report of that committee is issued, no official list of records other than those made in championships can be given. It has been decided that no speed performance which is accomplished in a bath less than twenty-five yards in length will be classed as a record.

AMATEUR CHAMPIONSHIPS OF SCOTLAND

Year	Winner	Club	Time	Place
		FIFTY YARDS		
1892	E. G. Thomson.	Pollokshields	m. s. 0 30$\frac{3}{5}$	Cranstonhill Baths, Glasgow
		ONE HUNDRED YARDS		
1888	R. T. Hogg .	Lorne Club, Edinburgh .	1 14$\frac{1}{5}$	Townhead Baths, Glasgow
1889	H. Adam . .	Pollokshields	1 15	,,
1890	H. Adam . .	Pollokshields	1 12$\frac{2}{5}$	,,
1891	H. Adam . .	Pollokshields	1 12$\frac{2}{5}$	,,
1892	E. G. Thomson	Pollokshields	1 10$\frac{3}{5}$	,,
		TWO HUNDRED YARDS (LADIES)		
1892	Miss E. Dobbie	—	4 25	Townhead Baths, Glasgow
		TWO HUNDRED AND TWENTY YARDS		
1888	W. Whyte . .	West of Scotland . . .	3 9$\frac{2}{5}$	Gorbals Baths, Glasgow
1889	H. Adam . .	Pollokshields	3 9$\frac{1}{5}$	,,
1890	H. Adam . .	Pollokshields	3 2$\frac{1}{5}$	,,
1891	H. Adam . .	Pollokshields	3 7	,,
1892	E. G. Thomson	Pollokshields	3 8	,,
		FOUR HUNDRED AND FORTY YARDS		
1890	H. Adam . .	Pollokshields	6 43$\frac{1}{2}$	Cranstonhill Baths, Glasgow
1891	H. Adam . .	Pollokshields	6 40$\frac{3}{5}$	,,
1892	H. Adam . .	Pollokshields	6 24	,,

AMATEUR CHAMPIONSHIP OF SCOTLAND—*Continued*

Year	Winner	Club	Time	Place
		FIVE HUNDRED YARDS		
1884	W. Whyte . .	West of Scotland . . .	m. s. 8 12	North Wood-side Baths, Glasgow
1885	W. Whyte . .	West of Scotland . . .	8 15	,,
1886	R. Law . . .	Victoria	8 2	,,
1887	W. Whyte . .	West of Scotland . . .	7 56	,,
1888	A. H. Riddell .	West of Scotland . . .	8 3⅕	,,
1889	H. Adam . .	Pollokshields	7 49	,,
1890	H. Adam . .	Pollokshields	—	,,
1891	H. Adam . .	Pollokshields	7 41	,,
1892	J. Anthony . .	Edinburgh	7 49⅘	,,
		SIX HUNDRED YARDS		
1888	R. Hardie . .	Lorne Club, Edinburgh .	11 47	In the sea at Portobello
1889	L. McKenzie .	Hibernian Club, Edinburgh	12 10	,,
1890	L. McKenzie .	Hibernian Club, Edinburgh	11 55	,,
1891 [1]	L. McKenzie .	Hibernian Club, Edinburgh	11 32	,,
		HALF-MILE (BATH)		
1892	J. Bissland . .	Leander	14 2	Cranstonhill Baths, Glasgow
		GRACEFUL SWIMMING		
1892	J. Cunningham	Northern, Glasgow . .	—	Gorbals Baths, Glasgow
		GRACEFUL DIVING		
1889	J. Milne . . .	Northern, Glasgow . . .	—	Gorbals Baths, Glasgow
1890	W. J. S. Ballan-tyne . . .	Pollokshields, Glasgow .	—	,,
1891	Andrew Meiklem	Victoria, Glasgow . . .	—	,,
1892	Joseph Turrell .	Hibernian, Edinburgh . .	—	,,

[1] Lapsed since 1891.

IRISH AMATEUR CHAMPIONSHIPS

The Dublin Swimming Club in 1882 promoted three scratch races at 100, 220, and 880 yards, termed championships. W. R.

Tetley, of Liverpool, won the 100-yards race in 1882, and F. W. Huntington, of Liverpool, in 1883, when it was discontinued. Huntington won the half-mile in 1882 and 1883, and the 220-yards from 1882 to 1885, and the Dublin Club thereupon ceased to promote the events in question. The Bangor Co. Down Club promoted a quarter-mile and distance swimming under water championships, but the records do not call for special mention. W. R. Richardson, the famous Dublin long-distance swimmer, was the first winner of the quarter-mile. Dr. Barron, of the Otter Club, won it the second year, and F. W. Huntington on four other occasions. Mackenzie and Hardie, of Edinburgh, both scored wins. All these championships were held by individual clubs, and the titles are, therefore, merely nominal. Some strong efforts are being made to raise the tone of amateur swimming in Ireland, and to that end two distinct but powerful bodies have recently been formed in Leinster and Ulster.

WATER-POLO COMPETITIONS

THE INTERNATIONAL MATCHES

1890, July 28. Scotland beat England at Kensington Baths, London, by 4 goals to 0.

1891, Oct. 17. Scotland beat England at Cranstonhill Baths, Glasgow, by 2 goals to 0.

1892, Oct. 8. England beat Scotland at Westminster Road Baths, Liverpool, by 4 goals to 0.

ENGLISH INTERNATIONAL TEAMS

1890. F. Browne, Burton-on-Trent, goal; W. G. Carrey, Amateur, and H. F. Clark, Stroud Green, backs; J. F. Genders, Nautilus, half-back; W. Henry, Zephyr, centre forward; J. Finegan, Sefton, Liverpool, and J. L. Mayger, Burton-on-Trent (captain), forwards.

1891. G. W. Haarnack, Amateur, goal; H. Lake, Hanley, and J. E. Cragg, Amateur, backs; G. Hunt, Mayfield, half-back; A. W. Burghard, Nautilus, centre forward; F. P. Barrett, Hanley, and S. Pointon, Hanley (captain), forwards.

1892. G. W. Haarnack, Amateur, goal; R. A. Crawshaw, Mayfield, and F. J. Whitehurst, Burton-on-Trent, backs; W. Henry, Zephyr (captain), half-back; A. W. Burghard, Nautilus, centre forward; J. McConnell, Mayfield, and J. H. Hicks, Osborne, forwards.

SCOTTISH INTERNATIONAL TEAMS

1890. C. W. Donald, Edinburgh University, goal; G. S. Bryson, Dennistoun, and S. D. Cawood, Victoria, backs; A. Strauss, Southern (captain), half-back; A. Whyte, Victoria, centre forward; J. Bissland, Leander, and S. Capie, Dennistoun, forwards.

1891. D. Graham, South Side, Glasgow, goal; E. G. Thomson, Pollokshields, and J. L. Tulloch, Pollokshields, backs; James Russell, Victoria, Glasgow (captain), half-back; Neil Haldane, Pollokshields, centre forward; A. M. Cawood, Victoria, Glasgow, and John Strachan, Belmont, Dundee, forwards.

1892. W. Phillips, Queen's Park, goal; E. G. Thomson, Pollokshields, and R. Wilkie, Western (captain), backs; C. McKay, Hibernian, Edinburgh, half-back; Neil Haldane, Pollokshields, centre forward; T. Dobson, Heart of Midlothian, Edinburgh, and A. Whyte, Victoria, Glasgow, forwards.

THE WATER-POLO CHAMPIONSHIP

1888. Burton Amateur beat Otter in the final tie at the Lambeth Baths, London, on October 22, by 3 goals to 0.

1889. Burton Amateur beat Amateur in the final tie at the Kensington Baths, London, on October 21, by 2 goals to 0.

1890. Hanley beat Burton Amateur in the final tie played at Kent Street Baths, Birmingham, on October 18, by 6 goals to 0.

1891. Burton Amateur beat Nautilus in the final tie played at Stockport Baths on October 5, by 3 goals to 2.

1892. Nautilus beat Hanley in the final tie at Kensington Baths, London, on October 10, by 3 goals to 2.

SCOTTISH AMATEUR SWIMMING ASSOCIATION (WESTERN LOCAL CENTRE)

FINAL TIES

1886.	West of Scotland	beat	South Side	by 1 goal to 0.
1887.	Western Club	,,	West of Scotland	,, 2 goals ,, 1.
1888.	Western Club	,,	Victoria	,, 2 ,, ,, 1.
1889.	Victoria	,,	Eastern	,, 3 ,, ,, 0.
1890.	Victoria	,,	Pollokshields	,, 2 ,, ,, 1.
1891.	Pollokshields	,,	South Side	,, 2 ,, ,, 0.
1892.	Pollokshields	,,	West of Scotland	,, 1 goal ,, 0.

MIDLAND COUNTIES AQUATIC POLO ASSOCIATION

(*Management of contest taken over by the M.C.A.S.A. on its formation*)

FINAL TIES

1884.	Birmingham Leander	beat	Hanley	by 1 goal to 0.
1885.	Dudley	,,	Hanley	,, 1 ,, ,, 0.
1886.	Burton Amateur	,,	Hanley	,, 1 ,, ,, 0.
1887.	Burton Amateur	,,	Nottingham	,, 1 ,, ,, 0.
1888.	Hanley	,,	Suburban	,, 3 goals ,, 0.
1889.	Longton	,,	Burton Amateur	,, 1 goal ,, 0.
1890.	Hanley	,,	Longton	,, 3 goals ,, 1.
1891.	Burton Amateur	,,	Hanley	,, 2 ,, ,, 1.
1892.	Burton Amateur	,,	Birmingham	,, 5 ,, ,, 2.

NORTHERN COUNTIES CHAMPIONSHIP

1892. Manchester Osborne beat Manchester Leaf Street in the final tie played at New Islington Baths, Manchester, on November 7, by 4 goals to 1.

LONDON WATER-POLO LEAGUE

1889. Nautilus beat Otter in the final at the Kensington Baths on October 21, by 2 goals to 0.

1890. Nautilus beat Zephyr in the final at Kensington Baths on October 6, by 6 goals to 3.

1891. Amateur beat Nautilus in the final at St. George's Baths, Buckingham Palace Road, on October 10, by 8 goals to 0.

1892.[1] Nautilus beat Amateur after a draw in the final at Kensington Baths, on November 10, by 4 goals to 1.

[1] Second division contest started this year.

AMATEUR CHAMPIONSHIPS OF AMERICA

Year	Name	Club	Time
	ONE HUNDRED YARDS		
			m. s.
1883	A. F. Camacho	Manhattan Athletic	1 28¼
1884	H. E. Toussaint	New York Athletic	1 21½
1885	H. Braun	New York City	1 25¼
1886	H. Braun	Pastime Athletic	1 29⅕
1887	H. Braun	Pastime Athletic	1 17⅕
1888	H. Braun	Pastime Athletic	1 16⅖
1889	W. C. Johnson	Varuna Boat	1 22⅘
1890	W. C. Johnson	Manhattan Athletic	1 5⅕
1891	W. C. Johnson	Manhattan Athletic	1 10⅗
1892	A. T. Kenny	Philadelphia Athletic	1 18⅕
	ONE MILE		
1877	R. Weissenborn	New York City	45 44¼
1878	H. J. Heath	New York City	29 20
1883	R. P. Magee	Baltimore	29 42¼
1884	R. P. Magee	Baltimore	25 41½
1885	R. P. Magee	Baltimore	22 38
1886	R. P. Magee	Baltimore	29 2
1887	A. Meffert	Manhattan Athletic	35 18½
1888	H. Braun	Pastime Athletic	26 57
1889	A. Meffert	Manhattan Athletic	27 20
1890	A. Meffert	Manhattan Athletic	22 39¾
1891	J. R. Whittemore	Pastime Athletic	24 11⅗
1892	A. T. Kenny	Philadelphia Athletic	28 45⅘

NEW ZEALAND AMATEUR CHAMPIONSHIP

Year	Date	Distance	Name	Club	Time
		yards			m. s.
1890	January 30	440	H. J. Bailey	Auckland	7 10
	February 21	880	A. N. Duthie	Auckland	15 43
	February 21	100	H. J. Bailey	Auckland	1 20
1891	January 17	100	H. J. Bailey	Auckland	1 14
	February 20	150	H. J. Bailey	Auckland	2 13 6/10
	February 20	880	H. Nicholson	Auckland	15 55
1892	January 29	220	H. J. Bailey	Auckland	3 48 6/10
	February 27	100	H. J. Bailey	Auckland	1 15⅕
	March 2	440	H. J. Bailey	Auckland	7 30
	March 5	880	H. J. Bailey	Auckland	14 55
	February 20	Water-Polo. Christchurch A.S.C. beat East Christchurch by 5 goals to 2.			

LAWS FOR SWIMMING

The following are the principal racing laws of the Amateur Swimming Association of England. They are in the main the same as those of the Scottish and New Zealand Associations, as the latter bodies have based theirs on the rules promulgated by the senior body. They are liable to alteration at each annual general meeting, after due notice has been given, but they will be found of eminent service to any new association, as they are the result of twenty-five years' swimming legislation in England.

THE GOVERNMENT OF RACE MEETINGS

1. *Definition of an amateur.*—All amateur races held under the A.S.A. rules must be confined to amateurs according to the definition of the A.S.A., which is as follows :—An amateur is one who has never competed for a money prize, declared wager, or staked bet ; who has never taught, pursued, or assisted in the practice of swimming, or any other athletic exercise, as a means of pecuniary gain ; and who has not, knowingly, or without protest, taken part in any competition or exhibition with anyone who is not an amateur.

The following exceptions shall be made to this law, viz. :—Amateur swimmers shall not lose their amateur status by competing with or against professional football players in ordinary club matches for which no prizes are given, or in cup competitions permitted by the National Football Associations or Rugby Unions of England, Ireland, Scotland, or Wales.

2. *What constitutes a professional.*—A swimmer ceases to be an amateur, and becomes a professional, by—

(*a*) Engaging in swimming or any other athletic exercise—or personally teaching, training, or coaching any other person therein —for pecuniary gain.

(*b*) Selling, realising upon, or otherwise turning into cash, any prize won by him.

(*c*) Accepting remuneration by way of expenses or otherwise, over and above the third-class railway fare, for swimming in public, or by being employed for money or wages in a swimming bath or elsewhere as an attendant on swimmers.

3. *Novices.*—A novice is one who at the time of competing has never won a prize in a similar class of open competition—*i.e.* winning a prize for plunging, object diving, &c., or in any other branch of sport, will not disqualify the winner from competing as

a novice in a swimming race proper, or *vice versâ*. This rule does not apply to prizes won at school.

4. *Competitions to be advertised as under A.S.A. laws.*—All swimming races and competitions must be stated in the advertisements, entry forms, programmes, and all official notices, as to be held, and must actually be held, under the rules of the A.S.A., and the A.S.A. definition of an amateur must be printed on all entry forms.

5. *Competitors under suspension.*—Subject to the provisions herein contained, no person shall be allowed to compete while under sentence of suspension by or binding upon the Amateur Swimming Association, the Amateur Athletic Association, the National Cyclists Union, the National Skating Association, or the Scottish Amateur Swimming Association, and no amateur shall compete against such suspended person. The A.S.A. recognises the sentences of suspension or disqualification passed by the Amateur Athletic Association, the National Cyclists Union, and the National Skating Association, with respect to conduct in connection with athletics, cycling, and skating respectively, but will not recognise the ruling of any other body upon the conduct of swimmers as such, except in the case of Scottish swimmers who are governed by the S.A.S.A.

6. *Value prizes.*—In no case must money be offered or taken in lieu of a prize, or a value prize (*i.e.* cheque on a tradesman) be offered or taken.

7. *Betting.*—No betting to be allowed.

8. Every prize of the value of 5*l.* or upwards shall be engraved with the name and date of the meeting.

9. A club or managing body *not affiliated* to a district association, wishing to hold a race meeting under the rules of the association, must, before doing so, make application in writing to the district association for permission so to do.

N.B.—There are special rules relating to the granting of permits and the dealing with applications.

10. The executive of the district association shall have power to proclaim any amateur race meeting the arrangements of which are not in accordance with the above rules.

JURISDICTION OVER SWIMMERS

11. An amateur competing in a race meeting not registered in accordance with Rule 9 shall thereby disqualify himself from

competing under A.S.A. rules. The district association, to whom preliminary appeals shall lie, to have power to reinstate anyone so disqualified, should they think proper. Any amateur who shall otherwise infringe any of the foregoing rules, or who shall be proved guilty of any misbehaviour or unfair practice in connection with swimming, whether relating to racing or not, shall be liable to permanent disqualification, or to suspension for such period as the district association may think proper.

12. All sentences of disqualification or suspension by any of the district associations shall be binding on all clubs forming the association. Notice of final appeal against such a sentence must be sent to the honorary secretary of the A.S.A. within twenty-one days of the passing of such sentence. The appeal shall be dealt with by the appeal committee, but shall not be considered if the sentence shall have been disregarded by the suspended or disqualified person before the meeting of the committee.

13. Any amateur knowingly competing against one who is under sentence of suspension shall be himself suspended until the expiration of such sentence, or for any shorter or longer period the executive of the district association may think fit.

14. Pace-making in public for a professional or anyone under sentence of suspension will be regarded as a competition, and dealt with accordingly.

15. No amateur shall be allowed to compete as 'Unattached' for more than one season.

OFFICIALS

16. *Power of racing committee.*—A committee, under whose direction shall be placed all matters relating to the actual conduct of the meeting. They shall have the power to postpone all or any of the races, and to make any alteration in the programme they may think necessary.

17. *Appointment of officials.*—It shall be the duty of the committee to appoint the officials, to conduct generally the business of the meeting, and to adjudicate on any point not provided for.

18. *Secretary to see that officials are at their posts.*—It shall be the duty of the secretary to see that the various officials are at their respective posts before the first race is started, to provide for any contingency that may arise.

19. *Alteration of handicaps.*—The committee shall not have the power to alter any handicap after it has been received from the official handicapper.

20. *Decision of judges.*—One or more judges, whose decision shall be final in every competition, and with whom shall rest the power to disqualify any competitor.

21. *Decision of referee.*—A referee, who shall decide in the event of a difference of opinion between the judges. The decision of the referee shall be final in all cases.

22. *Stewards.*—One or more stewards, or clerks of the course, whose business shall be to call out the competitors for each event, and to keep the course clear.

23. *Timekeeper and starter.*—A timekeeper and starter.

ENTRIES

24. *Acceptances of entries.*—The committee shall reserve to itself the right of refusing any entry, or to return the same after acceptance, without being bound to assign a reason.

25. *Entrants to give real name and name of club (if any).*—Application for entry to a competition shall contain the applicant's real name and address (if a member of a swimming, rowing, athletic, or other kindred club, the name of the club also). No entry shall be accepted unless accompanied by the entrance fee.

26. *False entries.*—Entering in an incorrect name, or furnishing false, misleading, or incomplete information, will render the competitor liable to prosecution, and anyone so offending shall be disqualified from open competitions for a period to be determined by the executive of the district association.

27. *Entrants to send declaration that they are amateurs, and last three performances (if any).*—Intending entrants in handicaps shall be required to send with their entry a statement that they are amateurs according to the definition of the A.S.A., and also full and definite particulars of their last three performances, if any.

N.B.—Official entry forms, duly approved by the association, price 2*s.* 6*d.* per hundred, can be obtained on application in writing to the honorary secretary of any of the district associations.

28. *Youths' races.*—Entrants in youths' races must state their age and previous performances, and, if required, furnish a certificate of birth.

29. *Closing of entries.*—The date of closing entry for competitions promoted by individual clubs to be left to the discretion of such clubs, but it is strongly recommended that they should close several days before the event, in order to permit time for handicapping and the preparation of programmes.

PROTESTS

30. *Protests: how lodged.*—Protest against a competitor shall be made in writing to the honorary secretary or other official of the meeting before the prizes are distributed. If such protest be not made good within one calendar month, the prize shall be awarded. Every protest must be accompanied by a deposit of 5*s.*, which shall be forfeited in case the protest shall appear upon investigation to have been made on no reasonable ground.

31. *Starter to inform competitors before race of any protest.*—In the case of a protest being lodged before the race, the starter shall inform each competitor of such protest.

32. *Prizes: when withheld.*—In the event of a protest being lodged against a competitor, his prize shall be withheld until it is decided whether he is entitled to it or not. In the latter case the first prize shall be given to the second man, the second prize to the third man, and so on.

33. *With whom protest to be lodged.*—That any protest against the conduct of a competitor during a race must be lodged with the judge or judges immediately after the contest.

34. *Forfeiture of fees.*—A competitor on being disqualified shall forfeit any fee he may have paid.

STATIONS

35. *Heats to be drawn.*—Heats and stations in scratch races shall be drawn for; stations to count from the right, facing the course.

36. *How stations count.*—In open handicaps all stations count, according to the order in which the names appear in the programme from the limit man on the right.

STARTING

37. *Starting left with starter.*—All questions as to starting shall be in the absolute discretion of the starter.

38. *How to start competitors.*—The start shall be directed by the starter, who, when he is satisfied that all are ready, shall simply give the word 'Go!' Any start made before the starter's order shall be considered a false start, and the competitor be required to return to his station and start afresh, or be disqualified.

39. *Description of course.*—The starter shall, previous to the start, describe to the entrants the course of the competition, the spot where it shall terminate, and should the competitors be

required to round any object, the way which it shall be rounded. A competitor rounding an object contrary to the starter's order, and not turning back when called upon, shall be disqualified.

40. *Power of judges.*—The judges shall have sole and full power over the competitors after the start.

RACING

41. *Attire of entrants.*—An entrant may be excluded from taking part in any competition if in the opinion of the starter he is not properly attired.

42. *Fouling.*—Jostling, or swimming across and obstructing another, so as to impede his progress, shall disqualify the offender for the contest in question, and for such longer period as the executive of the district association may think fit. The judges of the competition to decide whether the foul has been accidental or wilful.

43. *Swimming over.*—A competitor 'swimming over' must complete the entire distance to qualify as the winner.

44. *Dead-heats.*—If a dead-heat ensue, the competitors shall again attend at such time and place as the judges may direct.

45. *Heats not to be started before the time stated.*—As far as possible the times on the programme, when mentioned, shall be adhered to, but no heat may be started before the stated time, except with the consent of all the competitors in such heat.

PRIZES

46. *Prizes to be purchased before date of meeting.*—All prizes should be purchased prior to the date of the meeting, and every prize above the value of 5*l.* must be engraved with the name and date of the meeting.

47. *Above the value of* 10*l.* 10*s.*—It is recommended that no prize be offered above the value of 10*l.* 10*s.*, except for challenge cups or the like, which have to be won more than once to become the property of the winner.

48. *Challenge prizes guarantee.*—Clubs or others offering challenge prizes subject to a guarantee for their return must, if required, state explicitly to each entrant the exact nature of the guarantee required, and in case any difficulty shall arise in arranging the terms, the decision of the executive of the district association in the matter shall be accepted by all parties as final.

49. *Alteration of challenge cup conditions.*—The rules and con-

ditions governing a challenge cup (or any trophy for a swimming contest which has to be won more than once) cannot be altered without the consent of the holder, or of the majority of the holders and others having a claim upon it, providing he (or they) are still eligible to compete for it.

PLUNGING

50. *What constitutes a plunge.*—A plunge is a standing dive, made head first from a firm take-off free from spring. The body is to be kept motionless, face downward, and no progressive action to be imparted to it other than the impetus of the dive.

51. *Termination of plunge.*—Such plunge to terminate when the competitor raises his face above the surface of the water.

52. *Measurement.*—The distance traversed to be measured along a straight line, at right angles to the diving base, to a line parallel with the diving base, over the farthest point reached by any portion of the competitor's body while fulfilling the above conditions.

53. *Championship and handicap plunges.*—In championships or level contests, each competitor shall be allowed three plunges, and the farthest plunge shall win. In handicaps the number of plunges to be left to the discretion of the promoting club.

N.B.—The championship contest has recently been altered to allow of the competitor plunging the farthest distance *in a given time* to be declared the winner.

REGULATIONS FOR UNIVERSITY COSTUME, WHICH MUST BE OBSERVED IN ALL COSTUME RACES

1. Only black, red, or dark-blue costumes, shall be worn.
2. Drawers shall be worn *underneath* the costume.
3. Trimmings may be used *ad lib.*
4. The shoulder-straps of costumes shall not be less than two inches wide.
5. All costumes shall be buttoned on the shoulder, and the arm-hole shall be cut no lower than three inches from the armpit.
6. In the front the costume shall reach not lower than five inches below the pit of the neck.
7. At the back the costume shall be cut straight from the top of shoulder to the top of shoulder.
8 The costume shall extend not less than four and a half inches

from the crutch downwards, and shall be cut in a straight line round the circumference of the leg.

N.B.—It is recommended that manufacturers make their costumes in accordance with the above regulations.

CONDUCT OF SWIMMING AND PLUNGING CHAMPIONSHIPS

Championship entries.—Anyone entering for an amateur championship must fill in a form provided by the association. Entries close to the honorary secretary for the district in which the championship is being held five days before the competition, and the names and clubs of the entrants are published in two recognised sporting papers.

First prize challenge cup.—The first prize for championship competitions is a challenge cup, upon which the names of all winners are engraved at the expense of the association, with a gold medal for second, and a silver medal for third; the medals to be struck from the registered die of the A.S.A.

Holding of cup by winner.—The winner of a championship challenge cup is entitled to receive and hold the same from the time of his giving satisfactory security, by the deposit of money or otherwise, until fourteen days prior to the date fixed for the next competition.

Cups in the possession of holders.—Challenge cups must be in the *bonâ fide* possession of their holders from the date of their formal delivery, or the committee may order the holder to return the cup to the trustees.

Certificate of win.—The club from which the winner of a championship has entered is furnished with a certificate of his win.

In all championships a special medal is given to all winners beating previous record.

CHAMPIONSHIP CONDITIONS

(1) *The mile championship.*—Originally promoted by the Metropolitan Swimming Association, afterwards known as the Swimming Association of Great Britain, 1869.

1. That this championship shall be open to all amateurs as defined by the A.S.A.

2. The entrance fee to be 5*s*.

3. Entries to be made on the official form of the association, and to reach the honorary secretary for the district in which the championship is being held, accompanied by the fee, five clear days before the date of the competition. The name and clubs of the entrants to be published in two recognised sporting papers.

4. The competition to take place annually upon a day to be fixed by the A.S.A., and to be conducted in strict accordance with its rules.

5. The course to be in open still water, and not less than 220 yards in length.

6. Each competitor to wear university costume, also a coloured skull-cap as a distinguishing badge.

7. The first prize shall be a silver challenge cup, to be won three years consecutively before becoming the property of any competitor, but in the event of any holder being defeated after having won the competition one year, he shall be entitled to a gold medal of the value of 3*l.* 10*s.*, or losing after winning two years consecutively, a gold medal value 7*l.* A gold medal for second, and a silver medal for third.

8. Any competitor failing to comply with any of the foregoing conditions to be disqualified, and to forfeit any fee he may have paid.

9. Any dispute or question arising that the foregoing conditions do not provide for to be determined as the district association may decide.

(2) *The half-mile championship.*—Originally promoted by the 'Sporting Life' newspaper, 1881.

(The same conditions as in mile championship.)

(3) *The* 100 *yards championship.*—Originally promoted by the South-East London S.C., 1878.

(Clauses 1, 2, 3, 4, 7, 8, 9, as in mile championship.)

Clause 5. 'The race to be swum in a still-water bath no less than 25 yards in length.'

Clause 6. 'Each competitor to wear university costume.'

(4) *The* 220 *yards championship.*—Originally promoted by the S.A.G.B., 1880.

(The same conditions as in 100 yards championship.)

(5) 500 *yards championship.*—Originally promoted by the North London S.C., 1878.

(The same condit ons as in 100 yards championship.)

(6) *The long-distance championship.*—Originally known as the Lords and Commons Race.

(Clauses 1, 2, 3, 4, 7, 8, 9, as in mile championship.)

Clause 5. 'The course to be between five and six miles direct, below lock in running fresh water, or in a tidal river.'

Clause 6. 'Each competitor to wear bathing-drawers.'

(7) *The salt-water championship.*—Originally promoted by the Portsmouth S.C., 1884.

(Clauses 1, 2, 3, 4, 6, 7, 8, 9, as in mile championship.)

Clause 5. 'The course to be in open salt water; and the distance to be 440 yards.'

(8) *The plunging championship.*—Originally promoted by the S.A.G.B., 1883.

(Clauses 1, 2, 3, 4, 7, 8, 9, as in mile championship.)

Clause 5. 'The competition to take place in still water.'

Clause 6. 'Each competitor to wear university costume.'

(9) *The water-polo championship.*—Promoted by the A.S.A. 1888.

1. The water-polo championship competitions shall be held annually, and they shall be open to teams of seven from all amateur clubs. The entrance fee shall be 10*s.* 6*d.* per team from affiliated clubs, and 21*s.* per team from those unaffiliated.

2. Each member of a team must have been a first-claim member of the club he represents prior to the date of the closing of the entries in any one year.

Note.—The definition of a first-claim member in the competition shall be 'one who joined the club he represents prior to joining any other swimming club of which he is a member, and which is competing.'

3. The entries shall close on June 1 in each year, and a list of club members, elected on or before that date, shall, together with entry, be sent to the honorary secretary for the district in which the final tie of the championship is being held.

4. The first round and first ties shall be drawn as follows:

(*a*) England shall be divided into the three divisions as defined by the constitution.

(*b*) The names of each club in each division who have entered in the competition shall be placed by the committee in one lot, and shall be drawn from such lot in couples at a time.

The two clubs thus drawn shall compete against each other, and the one first drawn shall, in each instance, have choice of bath.

5. After the first ties have been decided, the winning clubs shall be placed in one lot and drawn in couples, and compete as in the first round and ties, and so on until the tie be played, when the winners and runners-up shall be presented with seven medals or badges. There shall be a silver challenge cup or trophy, to be won three years consecutively before becoming the property of any club. A certificate shall be presented to the winning club.

6. In the event of a club drawing a bye in any of the drawings, the executive at its next meeting shall first draw a club to play against it from the lot. The two shall then be placed in a box, and the first drawn out shall have choice of bath. No club shall receive more than one bye in any one season.

7. The lots shall be drawn and the matches played as the committee may determine, and immediately after each drawing the secretary shall notify to each of the clubs drawn the name of the club it is drawn against, and the time within which the tie is to be played.

8. The management of the competition shall be in the hands of the district association in whose district the final tie is to be played.

9. Notice of the result of the match shall be sent to the honorary secretary of the district association, immediately after the match has been played, by the secretary of the winning club; or, in the case of a drawn game, by the secretaries of both clubs competing.

10. The competing clubs in all ties, with the exception of the penultimate and final ties, shall appoint the umpires and referee, but in the penultimate and final ties they shall be appointed by the executive.

11. The referee in all matches shall not belong to either of the competing clubs, and in the final tie all the officials must be members of clubs other than those competing.

12. On any questions of the interpretation of the rules of the competitions, or of the game, an appeal may be made to the executive of the district association, but the referee's decision must be acted upon during the game, although under protest. Protests and appeals must be formally intimated to the referee, and the competing club at the time the violation takes place, and must be

lodged by the protesting club with the secretary of the district association within three days thereafter, accompanied by a deposit of 5*s*., which may be forfeited if the executive consider the protest trivial or groundless. The club in whose bath the match is played shall be responsible that the conditions required by rules 1, 2, and 3 of the laws of the game are complied with, failing which they shall be liable to be disqualified.

13. Should either of the two clubs in connection with a protested cup tie have a member on the executive, the said member shall not be eligible to vote whilst the said protest is being considered.

14. The duration of each match shall be twenty minutes, and the distance between the goal-posts shall be not less than twenty yards.

15. In the case of a draw, the competing clubs may mutually agree to extend the duration of the game, but the extension of time shall not exceed ten minutes.

16. In the case of a drawn game the executive shall decide in which bath the match is to be played, providing the matter cannot be mutually agreed upon between the clubs concerned.

17. In the case of the number of competing clubs in any one division not being sufficient to hold a competition in the first round or ties, it shall be within the power of the executive to include such club, or clubs, in any other division.

18. Any club playing an ineligible player shall be deemed to have lost the match in which he takes part.

PRESENT 'STANDARDS' FOR ENGLISH AMATEUR CHAMPIONSHIPS

Standard certificates are given to each competitor accomplishing the following times, &c. :

(1) *Mile.*—Those completing the distance in 35 minutes
(2) *Half-mile* „ „ „ „ 16 minutes
(3) 100 *yards* „ „ „ „ 1 min. 12 secs
(4) 220 *yards* „ „ „ „ 3 mins. 15 secs.
(5) 500 *yards* „ „ „ „ 8 minutes
(6) *Long-distance.*—Those finishing within 10 minutes of the winner.
(7) *Salt-water.*—Those finishing within 30 seconds of the winner's best time in the race under decision.
(8) *Plunging.*—Those plunging 58 feet.

RECOMMENDATIONS FOR THE MANAGEMENT OF INTER-CLUB TEAM COMPETITIONS

Each team should contain from three to twelve competitors, who should be first-claim members of the club they represent.

In championship and other important events it is advisable, in order to test the average speed rate of a club, that the team should consist of ten or more competitors.

The course should in all cases be so arranged that each competitor, after completing his distance, shall finish at the starting-point.

The distance that each competitor should swim should be from 60 to 150 yards. It is usual to start two teams in a race, but if the course be sufficiently wide, any number may compete at once.

The officials should consist of a judge and two starters. The judge to be selected by mutual consent, and the starters by the opposing teams. Starters need not be appointed, but the race continued after the first man has been started by the next one starting on being touched by the competitor who has finished his distance.

The duty of the judge is to start the race by the word 'Go,' and see that each competitor completes the course and otherwise carries out the conditions.

The starters, if there are any, continue the race by starting the competitors of the opposing team after the first man has finished the distance. If they make a mistake or delay a competitor in his start, the judge may, at his discretion, award the race to the team whose position may have been damaged by the mistake.

Every competitor must start with a plunge from the starting point, and should he go before his time the judge may order him back or disqualify the team. The teams should line up at the starting-point in the order in which they decide to swim, number one of each team taking his place ready to start.

On the word 'Go' from the judge, number 'one' of each team then competing shall start together, whereupon number 'two' of each of the competing teams take the place of those started, and wait until they have completed the distance. As soon as number 'one' of a team finishes, number 'two' of that team is started, number 'three' starts when number 'two' finishes, and so on, until every member of the team is started. The team whose last man shall finish first to be declared the winner.

CLUB FORMATION

The following is a specimen copy of a club book, with rules as adopted by leading clubs in Great Britain. There is a very great demand for information of this character.

Title-page.—Name of club and date of formation. What bodies affiliated to. Season for which book is issued.

Second page.—Officers, including *addresses* of honorary secretary and honorary treasurer.

Third page.—Definition of an amateur fully displayed.

Succeeding pages.—Rules.

RULES

1. That this club be called the Swimming Club.

2. That only those who are strictly qualified to claim the title of 'amateur,' according to the definition laid down by the A.S.A., shall be eligible for membership. Candidates must be proposed and seconded in writing by two members on the club form of election, and be ballotted for at a meeting of the committee, one black ball in every three votes to exclude.

3. That the objects of the club shall be :—

   A. The instruction and encouragement of swimming, floating, and diving in all branches.

   B. The study and practice of the drill instituted by the Life-saving Society for :—

      a. The rescue of the drowning.

      b. How to release one's-self from the clutch of a drowning person.

      c. The resuscitation of the apparently drowned

   C. The encouragement and practice of water-polo.

4. That all races, water-polo matches, &c., be governed by the laws of the A.S.A., to which this club shall be affiliated.

5. That all life-saving drills and competitions be according to the laws and methods of the Life-saving Society, to which this club shall be affiliated.

6. That the colours of the club shall be :— University costume . Flag and drawers, stripes.

7. That the subscription shall be per annum, which becomes due immediately on joining and subsequently on the in each year.

8. That any member having failed to send in his resignation to the secretary before , shall be liable for his subscription for the current year.

9. That no member be entitled to the privileges of the club, or eligible to enter for any club race or competition, until his subscription and all his liabilities to the club be paid.

10. That the management of the club be vested in a committee, consisting of the president, one or more vice-presidents, captain, vice-captain, honorary secretary and honorary treasurer, handicapper, and other members, to form a quorum. The committee shall have full and absolute power to do all such acts and things as they may deem necessary for the carrying out of the objects and interests of the club. The power of expelling members shall be vested in the committee, who shall be specially summoned for that purpose. The committee shall meet once a fortnight, or at such other times as may be deemed necessary.

11. That the committee meet at least once in each month throughout the season, and at such other times as may be deemed necessary to transact the business of the club, and that the secretary enter the minutes of such meetings in a book provided for that purpose.

12. That in the event of any member of the committee not attending for four consecutive committee meetings (except in case of illness), it be considered equivalent to his resignation, and the committee do proceed to fill up the vacancy.

13. That if at any time it be necessary to call an extraordinary meeting of the committee, notice of the same shall be sent to each member thereof, giving no less than one day's clear notice.

14. That meetings, for the practice of members and the instruction of non-swimmers, be held at Baths (close to) every evening throughout the season, from 8 P.M. until closing time.

That life-saving and resuscitation drills be held at head-quarters, on such evenings as the sub-committee may select.

15. That at the written request of seven members, the secretary shall call a special general meeting at any time, notice of which shall be posted to each member seven days prior to such meeting, stating for what purpose it is to be held; and no other subjects than those stated in the notice shall be brought before the meeting, whose decision in the matter will be final during the season.

16. That a general meeting of members be held once in each

year, in , and a statement of affairs be presented by the honorary secretary.

17. That all offices in the club be honorary.

18. That all members desirous of competing in open competitions under the colours of the club must enter through the secretary.

19. That in the event of anything occurring not within the scope of the foregoing rules, the committee deal with the same at their discretion.

Bye-law.—That no member will be recognised as such unless he wears the club drawers at practice.

RACING RULES

1. That the club uniform be worn at all races unless otherwise provided.

2. That in all competitions where the A.S.A. costume is worn, members must wear the club uniform with drawers underneath.

3. That every competitor shall, on completing each length of the bath, touch the side with his hand; and on completing the entire distance of the race, shall touch the side of the bath at the top, failing which he will be disqualified.

4. That when there are three heats, or less than three heats, the first and second in each heat shall be entitled to start in the final; if four or more heats, only the first in each shall be entitled to start in the next series or final.

5. That a race having been fixed, and a starter and judge appointed by the committee, either shall have the power, in the event of the non-attendance of the other, to appoint another starter or judge as the case may be; if both be absent, the competitors themselves shall, by show of hands, appoint both starter and judge.

6. That the starter and judge be empowered to alter the arrangement of heats at their discretion, if expedient.

7. That the judge shall have the power of disqualifying a competitor, if, in his opinion, he has unfairly bored or fouled another during a race.

8. That the decision of the judges in all races be final.

INSTRUCTION IN SWIMMING

Free tuition is given to members who are non-swimmers every at the Baths by competent instructors.

As soon as a member is ready, his ability will be tested by the classing committee.

Certificates as to swimming ability will be awarded as follows :

1st class.—880 yards in 18 minutes.

2nd class.—440 yards in 10 minutes.

3rd class.—220 yards in 5 mins. 30 secs.

Water-polo rules.

Hints of life-saving.

Bath arrangements.

Conditions of principal club competitions.

Club calendar for the season.

Average prize : Silver medal.—The competition for this prize will be held throughout the season. The conditions are as follows :

The scorer of the highest number of marks at the end of the season shall be the winner. The marks are arranged as follows :—

For starting in a race . . .	1 mark
For winning a heat	3 marks
For being second in a heat . .	2 „
For being third in a heat . . .	1 mark
For winning a final	3 marks
For being second in a final . .	2 „
For being third in a final . . .	1 mark

A competitor is not entitled to a mark unless he completes the distance.

Information relating to swimming championships, results, records, &c.

Memorandum pages.

BIBLIOGRAPHY OF SWIMMING

This list does not include magazine articles, or the cheap handbooks published from time to time, which, although in some cases purporting to be original, are very largely drawn from the works of Wynman, Digby, Thevenot, Steedman, and Wilson. Most of the books mentioned are to be found in the Library of the British Museum.

1531. *The Boke called the Governour.* By Sir Thomas Elyot, Knight. London, 1531, 1537; new edition, 1834.

1538. *Colymbetes, sive de arte natandi dialogus et festiuus et iucundus lectu.* Per Nicolaum Wynman, Ingolstadii linguarum professorem publicum. Propertius, lib. 2: Qualem purpureis agitarem fluctibus Hellen, Aurea quam molli tergore uexit ouis. Anno MDXXXVIII, 94 pages without pagination. 12mo. Excudebat Henricus Steyner, Augustæ Vindelicorum. The work is written in dialogue form, the interlocutors being Pampirus and Erotes. Also issued 1623, 1638, 1644, 1889.

1587. *De Arte Natandi Libri duo, quorum Prior regulas ipsius artis, posterior vero praxin demonstrationemque continet.* Authore Everardo Dygbeio, Anglo in Artibus Magistro. Londini excudebat Thomas Dawson. 144 pages, 44 full-page woodcuts. 4to.

1595. *A Short Introduction for to Learne to Swimme gathered out of Master Digbies Booke of the Art of Swimming, and translated into English for the better instruction of those who understan' not the Latine tongue.* By Christopher Middleton. London. With wooden cuts of persons swimming.

1658. *The Compleat Swimmer; or, The Art of Swimming, Demonstrating the Rules and Practice thereof, in an Exact, Plain, and Easie Method, Necessary to be known and practised*

by all those who studie or desire their own Preservation. By William Percey, Gent. London, for H. Fletcher. 12mo. About 90 pages with Preface.

1696. *L'Art de Nager, démontré par figures, avec des avis pour se baigner utilement.* Par M. Thevenot. A Paris, chez Thomas Moette, rue de la Boucherie. Avec privilège du Roi. 12mo.

1699. *The Art of Swimming, illustrated by proper figures, with advice for bathing.* By M. Thevenot. Done out of French, to which is prefixed a prefatory discourse concerning artificial swimming, or keeping one's self above water by several small portable engines in case of danger. London. D. Brown. 12mo. 24 + 60, with 40 engravings. Other editions in English. 1669, 1764, 1789.

1741. *L'Art de Nager, ou invention à l'aide de laquelle on peut toujours se sauver du naufrage, et en cas de besoin faire passer les plus larges Rivières à des Armées entières.* Par Jean Frédéric Bachstrom, Docteur en Médecine, etc., Amsterdam. 12mo. 70 pages, 1 plate. This is merely a lengthy description of a cork-jacket, which the writer invented for use by soldiers and sailors.

1744. *Observations on a case published in the last volume of Medical Essays, &c., of Recovering a Man Dead in Appearance, by distending the Lungs with Air.* Printed at Edinburgh, 1744. By John Fothergill, Licent. Coll. Med., London. 'Transactions of the Royal Society,' vol. xliii.

1744–1893. *Reports of the Royal Humane Society.* London.

1769. *A Dissertation on the Use of Sea-water.* By Richard Russel, M.D., to which is added a translation of 'Dr. Speed's Commentary on Sea-water.' Fifth edition.

1775. *The Baths of the Romans, with the Restorations of Palladio.* By Charles Cameron. London.

1782. *L'Art de Nager, théorique et pratique. L'Art de Nager, avec des avis pour se baigner utilement.* Précédé d'une dissertation, où l'on développe la science des anciens dans l'art de nager, l'importance de cet exercice et l'utilité du bain, soit en santé, soit en maladie. Ouvrage utile à tout le monde, et destiné particulièrement à l'éducation des jeunes militaires du Corps Royal de la Marine. Par Thevenot. Quatrième édition. Paris. 12mo. Plates well drawn, although positions and styles do not agree with modern ideas. Thevenot drew very largely from Wynman and Digby, and the illustrations of Digby have

been redrawn in many instances. The English editions previously mentioned became the standard works on the subject, and are frequently referred to as well as plagiarised by later authors.

1783. *An Address to the King and Parliament of Great Britain on Preserving the Lives of the Inhabitants.* By W. Hawes, M.D., also farther hints for restoring animation by an improved plan. By A. Fothergill, M.D., F.R.S. London.

1783. *A Dissertation on the Preservative from Drowning, and Swimmer's Assistant; a new invention, simple, commodious, and of small expense.* By R. Macpherson, Gent. London. 8vo.

1787. *An Essay on Sea-Bathing, and the Internal use of Sea-Water.* By Richard Kentish, M.D.

1795. *A New Enquiry into the Suspension of Vital Action in Cases of Drowning and Suffocation.* By A. Fothergill, M.D., F.R.S. Bath.

1797. *Oronzio de Bernardi's vollständiger Lehrbegriff der Schwimmkunst, auf neue Versuche über die spezifische Schwere des menschlichen Körpers gegründet.* Aus dem Italienischen übersetzt und mit Anmerkungen begleitet von Friedrich Kries, Professor an dem Gymnasium zu Gotha. Weimar, 1797, im Verlage des Industrie-Comptoirs. 8vo.

1798. *Guts Muths Th. Chr. Fr. Lehrbuch. d. Schwimmkunst gr.* 8. Weimar.

1799. *On the Preservation of Shipwrecked Mariners.* In answer to the Prize Questions proposed by the Royal Humane Society. By A. Fothergill, M.D., F.R.S. London.

1801. *The Sports and Pastimes of the People of England.* By Joseph Strutt. London. This oft-quoted work only gives a page (66) on swimming.

1804. *Practical Observations concerning Sea-Bathing, &c.* By A. P. Buchan, M.D. London. 8vo.

1807. *Arte de Nadar compendiada del que escribió en Italiano.* By Oronzio Bernardi. Madrid. Imprenta de Alban, 1807. 8vo. 11 plates.

1816. *Scientific Swimming*; being a series of practical illustrations on an original and progressive plan, by which the art of swimming may be readily attained, with every advantage of power in the water; accompanied with twelve copper-plate engravings, comprising twenty-six appropriate figures. By J. Frost, many years teacher of the art at Nottingham. London,

Darton, Harvey & Darton, Gracechurch Street. 8vo. 12 plates.

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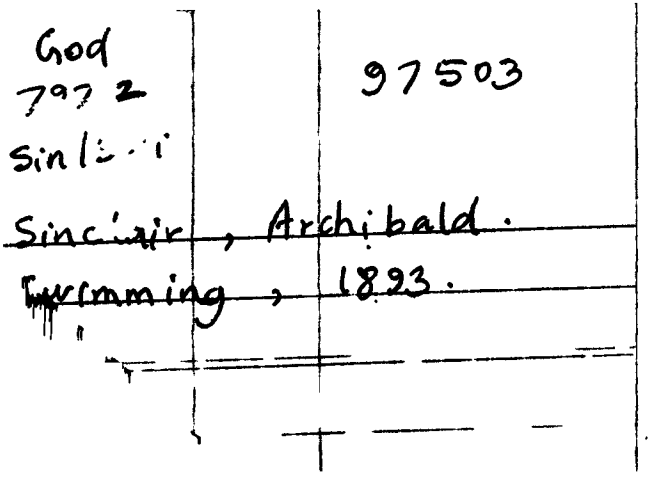
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